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THE USE OF SULFADIAZINE AND SULFATHIAZOLE IN DIABETES MELLITUS

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Treatment of 100 consecutive diabetic patients by means of sulfathiazole and sulfadiazine is here reported with respect to the toxicity of these drugs in diabetes mellitus, their effect on the control of diabetes and the efficiency of the treatment in various types of infection.

Sulfanilamide became generally available in 1937. It was found to be effective against beta hemolytic streptococci, meningococci, urinary tract infections, trachoma, chancroid and lymphogranuloma venereum. To a less extent it was effective in gonorrheal infections, undulant fever and actinomycosis. In 1939 sulfapyridine was widely and effectively used in pneumococcic infections and gonorrheal infections. In 1940 sulfathiazole proved more effective and less toxic in staphylococcic infections, and in 1941 sulfadiazine was introduced as even more efficient against all organisms than the drugs mentioned and, in addition, it was found active in Friedländer infections.

Recently Beardwood and Rouse [1] attributed three cases of diabetic acidosis to the administration of sulfanilamide. Although the presence of acidosis does not necessarily imply the ketosis found in the diabetic with lowered carbon dioxide content of the plasma, the question arises, nevertheless, whether the sulfonamides can be used safely in the treatment of diabetic patients with infections without further serious disturbance of diabetic metabolism. Second, it may be asked whether dosages effective and safe in the nondiabetic may be used with equal effect and with equal safety in the presence of diabetes.

There are many references which bear on the changes encountered in the acid-base balance when sulfanilamide is given. A review of some pertinent reports in this respect may serve to emphasize the necessity for considering the status of the acid-base balance of patients who receive chemotherapy. If such consideration is important in the nondiabetic, then it is even more important for the diabetic, in whom acidosis may be easily precipitated.

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1. Beardwood, J. T., and Rouse, G. P.: Diabetic Acidosis, J. A. M. A. **117**: 1701-1704 (Nov. 15) 1941.

Southworth [2] showed a fall in carbon dioxide content of the plasma varying from 1.9 to 27.3 volumes per cent of 15 patients given a single test dose of sulfanilamide varying from 2.7 to 6.0 Gm. The fall occurred during treatment and up to forty-eight hours after the sulfanilamide was given. Basman and Perley [3] showed a prompt change in the reaction of the urine from acid to strongly alkaline while sulfanilamide was being given. Marshall, Cutting and Emerson [4] produced severe acidosis in dogs by giving doses of 1 to 2 Gm. of sulfanilamide per kilogram. Hartmann, Perley and Barnett [5] presented evidence to show that the lowered blood carbon dioxide and increased alkalinity of the urine were explained on the basis of primary hyperventilation which produced alkalosis. Beckman, Rossmeisl, Pettengill and Bauer,[6] however, were able to demonstrate that the entrance of bicarbonate into the urine preceded hyperpnea and that, therefore, hyperpnea must be considered a secondary event dependent on the acidosis.

ANIMAL EXPERIMENTS

In studies of the effects of the sulfonamides on animals, certain facts have been reported which again may be useful in anticipating changes to which the patient with diabetes is vulnerable. Feinstone and his associates [7] found that sulfadiazine is less toxic for mice than sulfapyridine or sulfathiazole. When comparison was made between the effects of the prolonged administration of the three drugs in monkeys, sulfadiazine seemed to produce the least evidence of tissue damage. Sulfadiazine was found to be less conjugated in the blood stream, and the acetylated drug was excreted rapidly in the urine. Since the acetyl derivative is soluble in urine, it was less likely to produce urinary complications. In the same study Feinstone and his associates demonstrated that sulfadiazine in doses of 2 Gm. per kilogram daily produced pathologic changes in the tissues of animals, confined for the most part to the kidneys. The organs of animals receiving only 0.5 Gm. per kilogram or less showed normal organs at necropsy. The blood concentration found in acute

2. Southworth, H.: Acidosis Associated with the Administration of Para-Amino-Benzene-Sulfonamide (Prontylin), Proc. Soc. Exper. Biol. & Med. **30**: 58-61 (Feb.) 1937.

3. Basman, J., and Perley, A. M.: Report of Patients Treated with Sulfanilamide at the St. Louis Children's Hospital, J. Pediat. **11**: 212-237 (Aug.) 1937.

4. Marshall, E. K., Jr.; Cutting, W. D., and Emerson, Kendall, Jr.: The Toxicity of Sulfanilamide, J. A. M. A. **110**: 252-257 (Jan. 22) 1938.

5. Hartmann, A. F.; Perley, Anne M., and Barnett, H. L.: A Study of Some of the Physiological Effects of Sulfanilamide: I. Changes in the Acid Base Balance, J. Clin. Investigation **17**: 465-472 (July) 1938.

6. Beckman, W. W.; Rossmeisl, E. C.; Pettengill, R. B., and Bauer, W.: Study of Effects of Sulfanilamide on Acid-Base Metabolism, J. Clin. Investigation **19**: 635-644 (July) 1940.

7. Feinstone, W. H.; Williams, R. D.; Wolff, R. T.; Huntington, E., and Crossley, M. L.: The Toxicity, Absorption and Chemotherapeutic Activity of 2-Sulfanilamidopyridine (Sulfadiazine), Bull. Johns Hopkins Hosp. **67**: 427-456, 1940.

toxic deaths in mice averaged between 170 and 200 mg. per hundred cubic centimeters. Death occurred in eight to twenty days. In mice acute toxicity could not be brought about by oral administration, since blood concentrations did not reach a high enough level. The concentration of the drug in the blood, determined largely by the dosage, seemed closely related to the occurrence of pathologic changes, a point of prime importance in clinical usage.

Greisheimer and his associates [8] studied the effect of sulfanilamide, sodium sulfapyridine and sodium sulfathiazole on the blood sugar and liver glycogen of rats which had been fasted and of rats which received dextrose after a fifteen hour fast. Three hours after drug administration the animals were killed. A dose of 1.8 cc. of 1 per cent sulfanilamide solution per hundred grams of body weight affected the blood sugar in neither group of animals. A decrease in the liver glycogen occurred in the fasting rats and a rise in the liver glycogen occurred in those which received dextrose. Solutions of sodium sulfapyridine varying from 7.5 to 10 per cent administered in doses of 1 cc. per hundred grams of body weight lowered the liver glycogen and raised the blood sugar of the rats. Sodium

TABLE 1.—*Results of Treatment of One Hundred Diabetic Patients with Sulfadiazine and Sulfathiazole*

Diagnosis	Number	Improved
Foot infection	52	49
Cystitis or pyelonephritis	20	18
Pneumonia	15	13
Carbuncle	4	4
Infected finger	3	1 saved, 2 amputations
Suppurative adenitis	3	3
Miscellaneous	14	13
Total diagnoses	111	105
Deaths	4 (3 among 26 amputations of the leg)	

sulfathiazole in the same amounts had little effect on the liver glycogen but raised the blood sugar. It was concluded from these studies that sodium sulfapyridine inhibits glycogen formation and storage. Wertenberger [9] reported a rise in the blood p_H of rats from 7.52 to 7.66 and from 7.53 to 7.60 respectively after intraperitoneal injections of the sodium salts of sulfapyridine and sulfathiazole. Their data support the view that the high alkalinity of these compounds tends to exhaust the buffer capacity of the body and to produce alkalosis. The effect of infection in the presence of lowered liver glycogen was emphasized by Richardson,[10] who found that in normal rabbits and depancreatized cats there existed a correlation between the amount of glycogen present in the liver and their resistance to the intravenous injection of staphylococci. He also found a lowered titer for agglutinins when poorly nourished cats received typhoid vaccine.

Joslin and his associates [11] state that "the causes for lowered resistance to infection in diabetes are still not apparent. It is certainly related to the malnutrition, lowered glycogen content of the liver, dehydration and acidosis which characterize the patient with poorly controlled diabetes. As to the exact mode and site of operation of these factors, little information is available."

Climenko and his associates [12] showed that continued administration of sulfathiazole to dogs for ten days in doses of 250 mg. per kilogram daily produced impairment of renal function, as evidenced by elevation of the blood urea nitrogen level and diminution in the urea clearance and excretion of phenolsulfonphthalein. The impairment was reversible. They demonstrated no effect on oxygen capacity or the oxygen and carbon dioxide content of the blood. No effect on liver function was indicated by the bromsulphalein test.

Long, Bliss and Ott [13] in experimental infections in mice concluded that the inferiority, with equivalent blood concentrations, of sulfadiazine to sulfathiazole in pneumococcic infections is offset by the relative ease with which higher blood concentrations are attained and maintained with sulfadiazine. They found that mice tolerated levels of 25 mg. per hundred cubic centimeters for periods of two weeks without apparent ill effects and without damage to the kidneys, liver or spleen.

Numerous reports deal with the precipitation of acetylated drugs in the kidneys, ureters and bladder. To date little demonstrable damage has taken place in the liver after administration of sulfathiazole or sulfadiazine.

CLINICAL DATA

In the course of the past year we have used sulfadiazine and sulfathiazole in over 100 cases of infection in diabetes. The patients ranged in age from 7 years to 86 years. One patient was 7 years old, 8 were from 15 to 30, 15 from 30 to 50, 18 from 50 to 60 and 58 over 60 years of age. Duration of diabetes varied from one month to thirty-three years. Eight patients had diabetes less than a year, 17 from one to five years, 29 from five to ten years and 46 over ten years' duration. Eighteen of the latter group had diabetes longer than fifteen years. The patients had a variety of cardiovascular and renal diseases. In comparing results obtained in diabetic with nondiabetic patients it is possible that some diabetic patients may come for treatment in a relatively early stage of an infection but that this may be offset by the well known tendency for pyogenic infections to extend rapidly in the diabetic. Actually no clear distinction is possible in this respect between diabetic patients of this series and the nondiabetic.

In table 1 a total of one hundred and eleven infections in diabetic patients is summarized with respect to improvement following the use of sulfadiazine and sulfathiazole. Among the 100 diabetic patients four deaths occurred. Only 15 patients with pneumonia were included in the series, of whom 1 died. The other patient with "unimproved" pneumonia was a woman aged 27 who had a very stormy clinical course and who finally improved with drainage of a lung abscess.

Our results compare satisfactorily with those of Flippin and his associates,[14] who in April 1941 reported

8. Greisheimer, E. M.; Hafkesbring, R., and Magalhaes, H.: Blood Sugar and Liver Glycogen After Single Doses of Sulfanilamide, Sodium Sulfapyridine and Sodium Sulfathiazole, M. Times **69**: 170-173 (April) 1941.

9. Wertenberger, G. E.: p_H Changes in the Blood Following Sulfapyridine and Sulfathiazole Administration, Am. J. Physiol. **133**: 488 (June) 1941.

10. Richardson, R.: Relation of Tissue Glycogen and Blood Chemistry to Bacterial Dissemination, Antibody Formation and Survival After Infection in Diabetes, J. Clin. Investigation **19**: 239-250 (Jan.) 1940.

11. Joslin, E. P.; Root, H. F.; White, Priscilla, and Marble, A.: The Treatment of Diabetes Mellitus, ed. 7, Philadelphia, Lea & Febiger, 1940, p. 457.

12. Climenko, D. R.; McChesney, E. W., and Messer, F.: Continued Administration of Sulfathiazole in Renal and Hepatic Function in the Dog, Proc. Soc. Exper. Biol. & Med. **46**: 124-128 (Jan.) 1941.

13. Long, P. H.; Bliss, Eleanor A., and Ott, E.: Studies on Sulfadiazine: I. The Chemotherapy of Experimental Hemolytic Streptococcal, Pneumococcal and Staphylococcal Infections in Mice, Bull. John Hopkins Hosp. **69**: 297-302 (Oct.) 1941.

14. Flippin, H. F.; Rose, S. B.; Schwartz, Louis, and Domm, A. H.: Sulfadiazine and Sulfathiazole in the Treatment of Pneumococcic Pneumonia, Am. J. M. Sc. **201**: 585-592 (April) 1941.

200 cases of pneumococcic pneumonia with twenty-eight deaths. Finland, Strauss and Peterson[15] used sulfadiazine in treating 178 patients with pneumococcic pneumonia, of whom 19 died. Previously one hundred and twelve deaths occurred in 687 patients treated with sulfapyridine or sulfathiazole.[16] More recently Billings and Wood[17] reported the use of sulfadiazine alone in 75 cases of pneumococcic pneumonia with but one fatality. In treating critically ill patients they administered sodium sulfadiazine intravenously in order to obtain early effective blood levels. They felt that sulfadiazine is the drug of choice in treating pneumococcic pneumonia.

Of the 52 foot cases 49 improved, but surgical and diabetic treatment given simultaneously may have been responsible. We had eighteen improved urinary infections. One unimproved patient had hydronephrosis and megaloureter requiring nephrectomy. Yet he continued to have some pyuria from the other kidney, in which stones were present. Improvement later occurred and at present an operation on the other kidney is contemplated. The second was a patient with a prostatic abscess who did later improve with incision and drainage of the abscess. The 4 cases of carbuncle, 3 of finger infections and 3 of suppurative adenitis also represent combined surgical and chemical treatment in which the favorable outcome can only in part be attributed to the drugs. In the miscellaneous group was 1 patient with a pyogenic brain abscess and associated meningitis, who died. Also were included ulcers of the leg, hemolytic Staphylococcus aureus septicemia, abdominal wall infection, lung abscess, furunculosis, cheek abscess, upper respiratory infection and postoperative pelvic cellulitis. The case of Staphylococcus aureus septicemia is the second with repeatedly positive blood cultures in which recovery occurred in our experience with sulfadiazine treatment.

As regards chronic bacterial infections which require prolonged treatment, Trevett, Nelson and Long[18] consider sulfadiazine the drug of choice.

It seems evident that one cannot expect chemotherapy to cure necrotic lesions such as carbuncles and gangrene in the diabetic. However, it seems to control extension of pyogenic infections and to have special advantages in pneumonia and particularly in genitourinary infections, to which the diabetic are notoriously vulnerable.

The organism in the pneumonias was predominantly the pneumococcus and that in the foot infections predominantly the hemolytic staphylococcus, with a few cases in which nonhemolytic staphylococci were recovered. Escherichia coli was recovered in practically all the urinary infections. In the miscellaneous cases the hemolytic Staphylococcus aureus was invariably found.

The pneumonia patients were usually given an initial dose of 2 or 3 Gm. of either drug followed by 1 Gm. every four to six hours until the temperature remained normal for twenty-four to forty-eight hours. The total dosage varied from 53 Gm. taken in nine days to 12 Gm. taken in two days. The drug levels varied from 1.6 to 11.4 mg. per hundred cubic centimeters but averaged 5 mg. per hundred cubic centimeters.

The patients with foot infections were given as a rule an initial dose of 3 Gm. of either drug and maintained with 1 Gm. every four or six hours. Total dosage varied from 12 Gm. given in the forty-eight hours preceding major amputation to 113 Gm. over a period of twenty-two days. The drug levels varied from 1.3 to 18.9 but averaged 6.3 mg. per hundred cubic centimeters.

Patients with urinary infections received smaller doses of the drug but were oftentimes given treatment over a much longer period of time. Frequently a patient with a urinary infection was given 1 Gm. every four to six hours for the first twenty-four hours. The dose was then ordinarily reduced to 0.25 or 0.5 Gm. every four hours. One patient received 51 Gm. given as 0.5 Gm. five times a day. Many patients were sent home on small doses of sulfadiazine or sulfathiazole (e. g. 0.5 Gm. three times a day) and were followed in office visits. Blood levels varied from 0.6 to 15.0 mg. but averaged 3.5 mg. per hundred cubic centimeters.

TABLE 2.—*Comparison of Effects of Sulfadiazine and Sulfathiazole on Two Hundred Nondiabetic*[14] *Compared with One Hundred Diabetic Patients*

	Sulfadiazine		Sulfathiazole	
	Per Cent Non-diabetic	Per Cent Diabetic	Per Cent Non-diabetic	Per Cent Diabetic
Nausea	10	12	21	18
Vomiting	5	10	9	11
Hematuria (microscopic)	4	2	9	0
Dermatitis	1	0	2	7
Conjunctivitis	0	0	1	7
Psychoses	7	5	3	2
Fever	1	0	2	5
Leukopenia (5,000)	2	0	2	0
Nonprotein nitrogen increased	..	2	..	0
Neutropenia (40%)	0	0	1	0
Anemia	..	5	..	9
Crystals	29	49	70	71
Incidence of toxic effects	..	23	..	46
Deaths	11	5	17	4

As a rule in the miscellaneous cases it was necessary to give doses approximating those in the foot cases to maintain relatively high blood levels. The highest total dosage was given to a patient with Staphylococcus aureus septicemia. She received 113 Gm. of sulfadiazine as 1 Gm. five times a day over a period of twenty-two days. During this time nausea and vomiting were the only toxic symptoms encountered. The blood level in this case varied between 8 and 12.6 mg. per hundred cubic centimeters. The same patient later received 45 Gm. of sulfadiazine given as 1 Gm. four times a day. Again nausea and vomiting were the only symptoms of toxicity. The levels of blood sulfadiazine in the second course of treatment ranged from 5.1 to 14.1 mg. per hundred cubic centimeters.

Toxic symptoms in diabetic patients appear with nearly the same frequency as in the nondiabetic patients of Flippin[14] and of Finland.[15] Finland, Strauss and Peterson published a table of toxic symptoms occurring among 446 patients treated with sulfadiazine in which the toxic reactions approximate those of Flippin and

15. Finland, Maxwell; Strauss, Elias, and Peterson, O. L.: Sulfadiazine: Therapeutic Evaluation and Toxic Effects on 446 Patients, J. A. M. A. **116**: 2641-2647 (June 14) 1941.

16. Finland, Maxwell, and Strauss, Elias: Treatment of Pneumococcic Pneumonias with Sulfapyridine, Sulfathiazole and Serum Analysis of the Results of Specific Therapy at the Boston City Hospital from July 1939 Through June 1940, Ann. Int. Med. **14**: 1184-1198 (Jan.) 1941.

17. Billings, F. T., Jr., and Wood, W. B., Jr.: Studies on Sulfadiazine: III. The Use of Sulfadiazine in the Treatment of Pneumococcal Pneumonia, Bull. Johns Hopkins Hosp. **69**: 314-326 (Oct.) 1941.

18. Trevett, G. L.; Nelson, R. A., and Long, P. H.: Studies on Sulfadiazine: II. The Clinical Use of Sulfadiazine in the Therapy of Bacterial Infections Other Than Pneumonia, Bull. Johns Hopkins Hosp. **69**: 303-313 (Oct.) 1941.

his associates. They also reported ureteral colic and gross hematuria in a patient with sulfadiazine on the seventeenth day of treatment. At the time the blood level was 19.8 mg. The anuria which developed was relieved by catheterization and pelvic lavage. A case was reported by Quick and Lord [19] of acute hemolytic anemia following the administration of sulfathiazole. A youth aged 19 received 10 grains (0.65 Gm.) of sulfathiazole every four hours, and after 70 grains (4.55 Gm.) jaundice appeared. The red blood count dropped to 840,000 and the icteric index rose to 16.5. There was associated azotemia and hypertension. This case illustrates the comparatively infrequent occurrence of severe toxic effects following moderate dosage. In table 2 the frequency of toxic symptoms in the nondiabetic series of Flippin, Rose, Schwartz and Donm [14] is compared with the occurrence of such symptoms in 100 diabetic patients. Although vomiting, dermatitis and conjunctivitis appear rather more frequently in the diabetic, hematuria was much less frequent. Sulfadiazine is less toxic than sulfathiazole in our group of patients. We have all been impressed with the lack of severe symptoms of toxicity encountered, when constant attention is given to early symptoms and to their prevention by the maintenance of a urinary output of 1,500 cc. daily. There were no cases of gross hematuria, and only 2 patients showed an increase in nonprotein nitrogen due to glomerulonephritis in 1 and severe toxemia from a foot infection in the other. One patient had abdominal pain, associated nausea and vomiting and a level of sulfadiazine of 25.3 mg. per hundred cubic centimeters in the blood but recovered promptly on omission of the drug.

The smallest dose of sulfadiazine causing reaction was 12 Gm. taken over a period of three days, whereas

TABLE 3.—*Chemotherapy in Fifty-Two Diabetic Foot Infections*

	Dorsalis Pedis Pulsation			
	Palpable		Nonpalpable	
	Number	Per Cent	Number	Per Cent
Cases	20	39	32	61
Major amputation	3	15	23	72
Successful local amputation or drainage	17	85	7	22
Amputation refused	0	0	1*	3
Amputation planned	0	0	1*	3
Deaths	0	0	3	9

* Patients died.

in the case of sulfathiazole the smallest dose was 13 Gm. in four days. A few patients showed nausea and vomiting on 2 Gm. a day. One patient had nausea and anemia on 29 Gm. taken over a period of 15 days. Only in 2 cases was it necessary to omit sulfadiazine. The degree of conjugation is evident by the percentage of cases showing crystals in the urine. In summary, 46 per cent of the diabetic patients receiving sulfathiazole and 23 per cent of those treated with sulfadiazine showed some mild toxic effects.

FOOT INFECTIONS

In the study of these 52 cases of diabetic foot infections in which either sulfadiazine or sulfathiazole was administered, it is evident that the blood supply to the foot is of primary importance. Therefore in table 3 these 52 cases are divided into two groups, one consisting of 20 cases in which the dorsalis pedis pulsation was felt, the other of 32 cases in which no dorsalis pedis pulsation could be palpated. The outstanding facts were that in the first group with palpable dorsalis pedis pulsations major amputations were necessary in only 15 per cent of the group, whereas successful local amputation or drainage was accomplished in 85 per cent. On the other hand, in the group without palpable pulsations in the feet major amputations were required in 72 per cent of the cases and advised in 6 per cent, leaving only 22 per cent in which successful local amputation or drainage was done. Therefore, though it has seemed that the use of these drugs is advantageous in preventing the extension of acute infection, they are not and should not be used except with constant supervision of experienced surgical consultants. Indeed, it is not only obvious that chemotherapy does not in such cases provide a substitute for surgery, but actually there is genuine danger that dependence on chemotherapy may lead to such delay that the opportunity for successful surgery is lost.

TABLE 4.—*Effect of Chemotherapy on Insulin Dosage in One Hundred Cases of Diabetes*

1. Insulin increased	45	
2. Insulin decreased	31	55
Insulin remained the same	24	
Insulin equal to or less than discharge dose	17	

The following is a case in point:

A housewife aged 61, who had had diabetes of twenty-two years' duration, developed a small lesion on the dorsum of the third right toe two weeks prior to admission. Treatment had been administered locally without response, and gangrene developed in the toe. On admission lymphangitis had extended on the dorsum of the foot to the ankle. The patient was immediately placed on sulfadiazine, 6 Gm. daily. Local incision and drainage with disarticulation of the toe were performed. The patient had a moderate fever from the time of admission. On the third day of chemotherapy nausea and vomiting developed and the temperature rose to 101 F. At this time the sulfadiazine level was 13.8 mg. per hundred cubic centimeters and the nonprotein nitrogen of the blood 27 mg. per hundred cubic centimeters. The diabetes was under good control. Sulfadiazine was discontinued because of nausea and vomiting. On the fourth day the patient appeared generally improved. On the fifth day, however, she suddenly developed rapid pulse, cough, and dyspnea with numerous bilateral pulmonary rales which, after x-ray examination, was thought to be consistent with bronchopneumonia. The nonprotein nitrogen was 70 mg. per hundred cubic centimeters and the sulfadiazine level 4.3 mg. It was felt that a guillotine operation should be performed, but the patient's condition obviated operation. She died a few hours later.

Had the patient been treated without regard to chemotherapy and a guillotine operation done early, perhaps she would not have died. In such cases, choice of procedure may be most difficult and hazardous. On the one hand, chemotherapy may in some instances prevent extension of infection and vascular thrombosis, thereby protecting the circulation to the part. On the other hand, reliance on chemotherapy may lead to delay, permitting embolism or other complications which may prevent surgery entirely. Table 3 illustrates the great difference between local surgery in

19. Quick, E. D., and Lord, F. D.: Acute Hemolytic Anemia Following Sulfathiazole Administration, J. A. M. A. **117**: 1704-1706 (Nov. 15) 1941.

patients with good and poor circulation. The fact that no amount of drug therapy can make up for deficient circulation is evident.

EFFECT OF CHEMOTHERAPY ON DIABETIC CONTROL

The effect of sulfadiazine and sulfathiazole on the control of the diabetes during the course of infection may be estimated in many ways as, for example, by changes in the blood sugar or in the amount of dextrose that is excreted in the urine, but one of the best indications is the effect on the insulin requirement. The insulin dosage of these patients varied from none to 90 units. Twenty-two patients required less than 10 units, 19 from 10 to 20 units, 31 from 20 to 40 units, 24 from 40 to 60 units, 2 from 60 to 80 units and 2 above 80 units. This requirement was based on the discharge dosage of insulin. In table 4 are summarized the changes in the insulin dosage during treatment of 100 diabetic patients in this series. It is seen that in 45 cases the insulin dose was somewhat increased, the increases being small as a rule, but in a few cases were as great as 50 to 60 units and in 1 case 100 units. In 55 cases no evidence of an increased requirement for insulin occurred. Thus, in 14 cases the insulin dose decreased, probably as a result of improvement in the infection. In 24 cases the insulin dose remained

TABLE 5.—*Effect of 4 Gm. of Sulfadiazine on the Carbon Dioxide Content of the Blood Plasma*

Time in Hours	CO_2 Content of Plasma, Vols. %	Blood Sulfadiazine, Mg.	Blood Sugar, Mg.
0	16 units of crystalline insulin and supper		
1	58	0	278
	4 Gm. of sulfadiazine by mouth		
2	54	1.1	267
3	59	1.4	190
4	58	2.4	148
5	58	8.0	82
12	57	7.3	125

A woman aged 71. Duration of diabetes, 1 year. Infected gangrene of foot.

the same, and in 17 cases the amount of insulin required during the period of drug administration was equal to or less than the amount of insulin required on final discharge from the hospital.

Diabetic control is manifestly difficult in the presence of infection. This fact is so axiomatic that the progress of infection is easily followed by the manner in which the diabetes behaves. A man aged 40 in our series, who had a carbuncle, required 100 units of insulin daily for control. Yet later the blood sugars were normal and the urine was sugar free without insulin. It would seem, however, that chemotherapy aids in the control of diabetes by controlling infection, and this is borne out by the fact that only 45 per cent of the patients required more insulin in the presence of an infection. Determination of the effect on insulin dosage of a patient under treatment is difficult because changes in diet and activity in patients under treatment are necessary. Thus inactivity in bed increases the insulin requirement. At least it is apparent that chemotherapy had no striking or permanently harmful effect on the diabetes.

Insulin reactions were very rare in the series. The tendency of the blood sugar to remain at an elevated level during infection makes reactions unlikely, but care must be taken to prevent reactions in patients whose insulin requirement drops with improvement in the infection.

PRODUCTION OF ACIDOSIS

There were no cases in which acidosis developed concomitant with or because of chemotherapy, as indicated by daily tests for diacetic acid in the twenty-four hour urine. As a test, an elderly woman was given 4 Gm. of sulfadiazine; the changes in plasma carbon dioxide, blood sugar and blood sulfadiazine levels during the following twelve hours are summarized in table 5. The patient entered the hospital in the afternoon with gangrene of the foot, lymphangitis half way to the knee, fever, arteriosclerosis, uncontrolled diabetes and in a condition even more precarious than these facts indicate. She was given sulfadiazine in the hope that extension of the infection might be prevented and that the guillotine amputation through the lower leg, to be carried out on the following day, might be done with less danger. As the table shows there was no significant fall in the plasma carbon dioxide content even though the blood sulfadiazine level rose to 8.0 mg. at the end of five hours. It is of interest that in such a patient a rapid increase in the blood level could be obtained without any evidence of toxic symptoms or of impairment of renal function. It is true that the patient received a small amount of insulin and that the blood sugar value fell in a desirable manner during the twelve hours following the dose.

SUMMARY

The use of sulfadiazine and sulfathiazole in 100 consecutive diabetic patients ranging in age from 7 years to 86 years with infections of various types was observed with respect to the frequency of toxic symptoms, the effect of these drugs on the diabetes and their efficiency in controlling the infection.

The chief toxic effects were nausea and vomiting, but these symptoms occurred with no greater frequency than has been reported in a series of nondiabetic patients. Grave toxic reactions did not occur.

Symptoms of toxic nature occurred with sulfadiazine less frequently and in less serious degree than were observed with sulfathiazole.

The avoidance of severe toxic symptoms depends on their prevention by constant attention to the relation between dosage and blood level of the drug, the maintenance of a urinary output of at least 1,500 cc. daily and vigilance in recognizing early symptoms with consequent omission of the drug.

The insulin requirement was increased in 45 cases during treatment, possibly as the result more of the infection than of the drug, as in 55 cases of the series an actual decrease in insulin dosage occurred, presumably because of the control of the infection.

No evidence of acidosis following the use of sulfadiazine or sulfathiazole was observed.

In diabetic foot infections the chief danger is from the diminished blood supply. Although chemotherapy may prevent extension of infections, the danger of allowing delay in performing surgery must be stressed.

The cure of 2 cases of septicemia due to hemolytic Staphylococcus aureus together with the striking results in genitourinary infections and in pneumonia give sulfadiazine first place as a chemotherapeutic agent in such infectious complications of diabetes.

THE KENNY TREATMENT OF ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS)

REPORT OF THE FIRST CASES TREATED IN AMERICA

JOHN F. POHL, M.D.
MINNEAPOLIS

In March 1940 Miss Elizabeth Kenny of Brisbane, Australia, proceeded to America to present to the American medical profession her unique and original method of treating the disease infantile paralysis. The method of treatment which has become known as the Kenny system has been evolved by Miss Kenny as a result of her painstaking study of the signs and symptoms presenting themselves in the acute stage of the disease as she has observed them over the considerable period of years since her graduation as a nurse in 1911.

Fig. 1.—Acute poliomyelitis: hamstring tendons. Spasm of the hamstring muscles prevents extension of the knee.

Her work has been officially recognized by her government in that clinics have been established at various centers throughout the Australian state of Queensland, and the treatment has been made available in the public institutions. Convictions based on this recognition prompted Miss Kenny to seek acceptance by the American medical profession in the belief that more widespread use of the method would be of value to the victims of the disease throughout the world. Realizing at the same time that her work, however successful from a practical point of view, lacked scientific explanation, Miss Kenny sought assistance in the research laboratories of America for the scientific elaboration of her theories.

The first case undertaken by Miss Kenny came under treatment in June 1940. In all, 26 cases in the acute and subacute stage were admitted to the Minneapolis General Hospital in the fall of 1940 and were personally treated or supervised by Miss Kenny. She was assisted by Miss Mary Stewart Kenny, herself a trained and skilled technician in the Kenny system, who had accompanied Miss Kenny from Australia. A special ward was set up in the hospital for the purpose of observing the methods and progress of the patients, and complete cooperation from the medical staff as well as the nursing staff was offered Miss Kenny. Approximately eighteen months have now elapsed since the beginning of the work in America. As the usually accepted period of recovery in poliomyelitis is considered to be from eighteen to twenty-four months following the attack, it is now possible to state the conclusions which can be drawn from the observation of the Kenny treated patients in comparison with similar experience in the same clinic previous to the use of the Kenny technic. A summary of these cases is contained in the accompanying table. The tremendous and far reaching advantages of the method over any previously recognized methods of treating infantile paralysis makes it imperative that the work of Sister Kenny be made generally known to the physicians of America as quickly as possible.

First it must be made clear that the Kenny method has no argument with any other method of treatment of infantile paralysis for the simple reason that the principles were designed for the management of specific findings appearing in the acute stage of the disease which had never been recognized previous to the work of Miss Kenny. Practically all attempts at treatment by other means have been aimed at the prevention of deformities, usually by splinting and immobilization, rather than by treating the condition affecting the muscles, which ultimately causes the deformities. In short, the Kenny method is a treatment of certain phases of the disease of infantile paralysis, while practically all other methods are in reality treatment of the after effects of the disease.

The disease of infantile paralysis in the acute stage presents three cardinal attributes according to the conception of Miss Kenny, other than the paralysis due to nerve damage. These fundamental characteristics are muscle spasm, mental alienation of muscle and incoordination of muscle function. It is obvious therefore that treatment based on these findings could have nothing in common with a treatment designed for a disease exhibiting flaccidity of muscle and one which does not recognize incoordination as occurring.

The Kenny method of treatment is based on the belief that poliomyelitis in the acute stage is a disease which attacks not only the nervous system but the muscle tissue directly as well. This is an inflammatory process within the muscle, of which spasm is the most distinguishing characteristic. Spasm of muscle is the earliest, the most common and the most damaging finding affecting the muscles in acute anterior poliomyelitis. Paralysis may or may not be present, depending on involvement of the motor cells of the spinal cord, but spasm is the damaging element in the involved muscles. This characteristic is usually associated in the acute stage with pain, and the spasm itself may be the cause of pain. One of the most striking features in the demonstration of the treatment is the prompt relief of pain and the remarkable comfort of the patient within a few days after treatment has been begun. This in itself is sufficiently dramatic and gratifying as to gain immediate enthusiasm for the method.

Spasm is the condition in muscle tending to cause shortening of the muscle. The stiff neck and the tight hamstrings are examples universally accepted as findings in the acute stage of infantile paralysis. It had not been previously considered that spasm may be a feature of the disease affecting all the involved muscles. Examples of the effect of muscle spasm are shown in figures 1 and 2. A muscle in spasm is unable to relax and allow itself to lengthen. As a result of the shortening process, temporary contractures appear which eventually become permanent deformities if the condition remains untreated. A muscle which is allowed to become shortened, besides causing deformities, has lost part of its useful function. The stiff painful contractures of the limbs are too well known to every orthopedist who has treated the disease in the convalescent stage to need further argument for a method which promises relief. The examination of old or

Fig. 2.—Acute poliomyelitis: tendon of tibialis anticus. Spasm of the muscle causes the foot to assume the varus position.

apparently recovered cases of infantile paralysis offers abundant proof of the damaging effect of untreated spasm. In many cases the hamstrings and back muscles are still tight and shortened, years after the acute process. Deformities may appear even in the nonparalytic form of the disease.

The relief of spasm is the first consideration in the treatment of the acute disease of infantile paralysis. The determination of the presence of spasm in a muscle can quickly be made by the physician from the presence of pain in the muscle or by the fact of limitation of joint motion by the affected muscle. Care must be exercised not to aggravate the condition of spasm by frequent examination or rough handling of the patient. Extreme gentleness in nursing attention is required in order not to cause more pain and spasm in the irritable muscles. Immediate treatment is imperative if serious and permanent damage to the muscle is to be avoided. Treatment must begin as soon as the disease has been diagnosed. A delay as long as three weeks may mean irrevocable harm to the delicate muscle substance. The Kenny treatment employs the use of moist heat. Wool flannel packs of proper size are immersed in boiling water, wrung twice through a tight wringer at the bedside and quickly applied to the involved area. The materials comprising the pack are shown in figure 3. The pack must accurately cover the entire body of the affected muscle, but joints are left free in order not to give the patient any sense of immobilization of the limb.

Fig. 3.—Acute poliomyelitis: Miss Kenny demonstrates the application of the hot pack. Note the covering layers in position ready for immediate completion of the pack.

The moist pack is covered with oiled silk and then with dry flannel. The pack is changed every two hours but may be renewed as often as every fifteen minutes if the spasm is very acute. Packs are continued through twelve hours of the day. No ointments are applied to the skin; burns do not occur if the packs are wrung quite dry. The acute spasm with pain will subside usually within a week if treatment is proper. Tendency of the muscle to remain in a state of contraction or

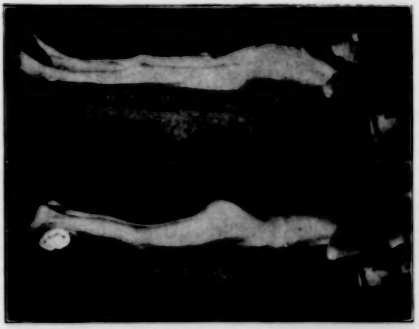

Fig. 4.—Acute poliomyelitis: Spasm of the hip flexor muscles causes the pelvis to tip forward.

shortening may persist for weeks or months, and especially if treatment is instituted some days or weeks after the onset. Hot packs must be continued until the muscle is able to extend itself completely as evidenced by full range of motion of the joint concerned. A remarkable state of health, tonus and vigor in all the tissue of the extremity affected is preserved by this

Summary of 1940 Cases Treated by the Kenny Method

Case No.	Patient	Sex	Age in Years	Duration of Symptoms Before Beginning Treatment	Involvement: Paralysis	Involvement: Muscle Spasm	Length of Hospital Stay	Result of Treatment and Present Condition
1	H. H.	♂	17	8 mos.	Severe both lower extremities; partial upper extremities; partial back; complete abdomen	Contractures back, hamstrings, calves, feet; scoliosis; decided incoordination of muscles	12 mos.	Contractures relieved; scoliosis improved; coordination restored; all muscles improved; walks with crutches; no apparatus; attends outpatient department three times weekly for treatment
2	L. L.	♀	5	3 days	Anterior tibials (transient)	Posterior neck, back, hamstrings, gastrocnemii	12 days	Complete relief of muscle spasm; complete restoration of muscle function; no deformities; normal child; no further treatment
3	C. R.	♂	22	3 days	Complete abdomen, complete both lower extremities	Severe neck, back, abdomen and all muscles of lower extremities	18 mos. (still in hospital)	Complete relief of muscle spasm; no deformities; full range of joint motion; recovery of abdominal muscles; lower extremities fluil; stands and takes few steps; daily treatment
4	D. G.	♂	7	3 days	Right scapular muscles weak; anterior neck (apparent); bulbar	Posterior neck, back, hamstrings; severe in abdominals	48 days	Complete relief of muscle spasm; recovery of paralysis; no deformities; normal child; full activity; no further treatment
5	R. G.	♂	17	24 days	Severe all extremities, chest, back and abdomen	Generalized severe, especially shoulders, hamstrings and lower extremities	9 mos.	Complete relief of muscle spasm; good recovery in all muscles except left upper extremity; walks with canes; no deformities; no apparatus; attends outpatient department two times weekly for treatment
6	D. J.	♀	19	9 days	Severe back, abdomen, both lower extremities	Posterior neck, back, hamstrings and gastrocnemii	11 mos.	Complete relief of muscle spasm; no stiffness or deformity; good recovery in back and left lower extremity; fair recovery in abdominal muscles and right lower extremity; walks with crutches; no apparatus; attends outpatient department three times weekly for treatment
7	C. C.	♀	6	1 day	Severe abdomen, both lower extremities	Severe posterior neck, back, hamstrings and gastrocnemii	9 mos.	Muscle spasm relieved; slight residual tightness of right gastrocnemius; abdomen recovered; fair recovery of most muscles of extremities; walking without braces or supports; no deformities; attends outpatient department three times weekly for treatment
8	F. S.	♂	11	23 days	Severe all extremities	Severe posterior neck, back, pectorals, hamstrings and gastrocnemii	2 mos.	All muscle spasm relieved; complete recovery of all muscles; no deformities; full activity; no further treatment
9	F. W.	♀	3	30 days	Partial generalized right lower extremity	Moderate posterior neck, back, hamstrings, right gastrocnemius	2½ mos.	All muscle spasm relieved; good improvement in all muscles; slight residual weakness of right gastrocnemius; no deformities; gait normal; no further treatment
10	D. J.	♀	9	3 days	Palate	Moderate posterior neck, back, hamstrings, right gastrocnemius; severe in adductors	33 days	All spasm relieved; no muscle weakness; no deformities; normal child; no further treatment
11	D. H.	♀	12	7 days	Total left lower extremity; moderate right lower extremity	Severe posterior neck, back, hamstrings and gastrocnemii	12 mos.	All muscle spasm relieved; recovery right lower extremity; complete residual paralysis left lower extremity; no deformities; walks well with crutches; attends outpatient department three times weekly for treatment; wears no apparatus
12	L. H.	♂	9	4 days	Slight left scapular muscles	Moderate posterior neck, back, hamstring muscles	25 days	All muscle spasm relieved; no residual paralysis; no deformities; normal child; no further treatment
13	F. S.	♂	6	3 days	Bulbar and encephalitic; very difficult swallowing and breathing; slight weakness left anterior tibial muscle	Severe posterior neck, moderate back, hamstrings and gastrocnemii	5 wks.	All muscle spasm relieved; no residual muscle weakness; no deformities; normal child; no further treatment
14	D. K.	♂	11	2 mos.	Complete right upper extremity; severe left shoulder	Contractures pectorals, biceps, trapezii and hamstrings	10 mos.	All contractures relieved; complete residual paralysis right upper extremity; improvement in left shoulder; has useful left upper extremity; no treatment at present time
15	P. G.	♀	1½	14 days	Left posterior and anterior tibials	Posterior neck, back, hamstrings; severe left gastrocnemius	10 wks.	All muscle spasm relieved; retained slight tightness of left gastrocnemius; partial return of anterior tibial; no deformity; no further treatment
16	W. K.	♂	6	2 days	None	Posterior neck, back, hamstrings; severe left gastrocnemius	10 wks.	All muscle spasm relieved; no deformities; normal child; no further treatment
17	A. A.	♀	33	5 wks.	Severe both lower legs; weakness of abdominal muscles	Contractures of gastrocnemii and hamstrings	10 mos.	Contractures improved; fair return of muscle power; walks well with crutches; no further treatment
18	J. E.	♂	7	20 days	Severe right shoulder and scapular muscles	Right pectoralis major, posterior neck, back and hamstrings	8 wks.	All muscle spasm and shortening relieved; residual paralysis of right deltoid; shoulder improved with scapula; receives home treatment
19	J. S.	♀	7	7 days	Severe generalized left lower extremity	Severe posterior neck, back, abdomen, hamstrings and gastrocnemii	13 mos.	All muscle spasm relieved; no deformities; much residual paralysis left lower extremity; walks well with crutches; attends outpatient department three times weekly for treatment; wears no apparatus
20	A. Q.	♀	18	9 days	None	Moderate posterior neck, back, hamstrings and gastrocnemii	17 days	All muscle spasm relieved; no deformities; normal child; no further treatment
21	R. L.	♂	4	7 days	Severe left lower extremity	Severe posterior neck, back, abdominals, hamstrings and gastrocnemii	7 mos.	Complete relief of muscle spasm; residual paralysis of left lower extremity; no deformities; walks well with manual assistance; attends outpatient department for treatment at intervals; parents were instructed in treating this patient
22	T. F.	♂	1½	4 days	Slight right lower extremity, generalized	Moderate in posterior neck, back, hamstrings and right calf	1 mo.	Complete relief of muscle spasm; full recovery of all muscles; normal gait; no deformities; no further treatment
23	W. C.	♂	20	3 days	Weakness right deltoid; moderate generalized both lower extremities	Right pectoralis major; severe posterior neck, back, hamstrings and gastrocnemii	7 mos.	All muscle spasm relieved; recovery of right deltoid; slight residual generalized weakness of lower extremities; walks well; no deformities; no apparatus; no further treatment

Summary of 1940 Cases Treated by the Kenny Method—Continued

Case No.	Patient	Sex	Age in Years	Duration of Symptoms Before Beginning Treatment	Involvement		Length of Hospital Stay	Result of Treatment and Present Condition
					Paralysis	Muscle Spasm		
24	R. N.	♀	9	3 days	Bulbar; comatose; no paralysis	Posterior neck, back and hamstrings	26 days	All muscle spasm relieved; no deformities; normal child; no further treatment
25	V. J.	♂	21	2 days	Weakness right shoulder and left hand; complete paralysis both lower extremities	Severe pectoralis major and severe posterior neck, back, hamstrings and gastrocnemii	15 mos. (still in hospital)	All muscle spasm relieved; recovery of shoulder; weakness intrinsic muscles of left hand; complete paralysis of both lower extremities; no deformities; stands but does not walk; daily treatment
26	M. H.	♂	20	3 mos.	All extremities when acute; chest; in respirator; moderate generalized residual weakness left upper extremity and both lower extremities	Contractures pectoralis, back, hamstrings; varus left foot; incoordination	4 mos.	All contractures and stiffness relieved; all muscle power improved; slight residual weakness of left upper extremity and both lower extremities; no deformities; walks very well; no further treatment

method, and freedom from circulatory and trophic changes are strikingly noteworthy. Figures 4 and 5 illustrate the effect of relief of muscle spasm by the Kenny treatment when promptly applied in the acute case of poliomyelitis.

With the relief of spasm begins the true restoration of function of the normal bodily mechanics. Spasm, besides the actual damage to the muscle tissue, has a further disturbing effect on the neuromuscular system. It must be kept in mind that motion of a joint in any given plane is a matter of control by opposing muscles. As the flexor begins to contract, the extensor relaxes or pays out slack in a graduated manner so that smooth joint motion results. The extensor, however, maintains a certain amount of tonus so as to be able to reverse the motion by contracting on instantaneous notice. Opposing muscles do not ordinarily contract at the same time. A muscle in spasm is a muscle attempting to contract. Spasm in the extensor will result in relaxation of the flexor of a joint. Furthermore, the flexor will refuse to pull against the extensor which is painful. The result is that the flexor in this case ceases function, although it may be quite normal. Such a muscle appears to be paralyzed, whereas in reality it is only nonfunctioning. It has become divorced from the motor pattern or alienated from the voluntary center regulating motion. It must be restored, and it can be made to function by teaching the patient awareness of the muscle and of its normal action on the joint. This is first done by the process of stimulation, that is of exciting the proprioceptive nerve endings in the muscle and tendon which normally inform the central nervous system of the position and motion of the joint. Alternately lengthening and shortening a muscle within its normal range of contraction by moving the joint in a small arc will serve to do this, care being taken, however, not to stretch or stimulate the opposing muscle which is in spasm. This procedure may be repeated daily until such time as the spasm has been relieved in the opposing muscle by the use of the hot foments. The patient is then gradually retrained in the use of the alienated muscle, first being taught the position and action of the muscle, but being allowed no voluntary joint motion until proper function of the muscle has been restored. Only by insisting that the muscle contract, but purely in a mental sense at first, when it is nonfunctioning, can eventual reestablishment of smooth coordinated motion of opposing muscles be secured. After normal rhythmic action of muscles is imprinted on the motor center, the patient is allowed voluntary effort.

To allow a patient to make haphazard motions of a joint in the presence of nonfunctioning muscles is to invite a state of incoordination. The patient makes such motions by the process of substitution. Consider the hip joint as an example. Normally the hip is flexed by the iliopsoas. The opponent is the hip extensor (hamstrings). Assume that the hip flexor ceases function. To flex the hip the patient may substitute the adductor (adductor longus, brevis and magnus). To gain mechanical advantage for these muscles in their new function, the hip is now externally rotated. Contraction of the adductors is normally associated with relaxation of the hip abductor (gluteus medius and minimus). It is unlikely that the hip extensor will pay out slack, at least smoothly, for contraction of the hip adductor if it is substituted for the flexor. Smooth motion is lost, and incoordination is established. This condition may become permanent. Only by carefully guiding every motion of the patient from the beginning of treatment can this undesirable state be avoided. The patient can be allowed no voluntary effort in muscle contraction in the presence of any incoordinated muscle action. He must be kept quiet in bed, being turned and cared for by the attendant until such time as proper muscle function is again restored. Once muscles are working in correct and harmonious action, use of the extremity serves to reenforce the nerve impulses retrained to their proper order.

The Kenny method employs no splinting of any kind. On the basis that spasm is the state affecting the muscles, it follows that splints would tend to aggravate the irritable muscle and increase the spasm. Rigid immobilization also tends to encourage shortening of muscle and resulting permanent contractures. Splinting also interferes with the application of moist heat. Most splinted extremities suffer from permanent trophic and circulatory changes because of failure of treatment of the tissues in the acute stage of the disease. The idea of splinting is to prevent contractures and deformities. While it may prevent contractures in flexion it will not prevent contractures in extension, a condition practically as damaging, as far as function is concerned. The Kenny method particularly stresses the avoidance of any form of immobilization. The patient is placed on a firm bed in the normal position of rest. This position is illustrated in figure 6. Even clothes are omitted from the patient, warmth being obtained by using flannel blankets for sheets. An upright board placed at the foot of the bed serves to stimulate the normal standing and postural reflexes. This is in no sense a splint. During the period of active spasm, usually lasting a week, and especially in the presence of any spasm of the calf muscles, the feet are not placed against the foot board. To do so would aggravate the spasm. In the 26

cases reported here no splints of any kind were applied during the entire course of treatment. It can be unreservedly stated that no deformities of any kind occurred in any of these cases as a result of the omission of splinting or immobilization.

It is well known that many patients with infantile paralysis do not have the paralytic form or recover without treatment. Recovery of these patients does not mean that the patient is restored to normal. Careful scrutiny of these patients even years after the disease will disclose that the back or hamstring muscles are still tight and shortened in many cases. Curvature of the spine and other deformities are seen to occur in these cases even when there was presumably no paralysis. While the inclusion of this type of case in the present report might seem open to question in a discussion of the therapy of infantile paralysis, the treatment of these patients is as important as it is of those who have real paralysis. Kenny treatment of this type of the disease will truly restore the patient to normal. Most of the patients are in fact better physical specimens after the training than they were prior to the attack of the disease.

Statistical comparison of the Kenny cases with any other series of cases is a practical impossibility. Paralysis occurs in each, but muscles that are soft, flexible and receptive can hardly be compared with those which are shortened, fibrosed and inelastic. A paralyzed leg which has good circulation cannot be compared with one which is cold, damp, clammy and blue. A paralyzed extremity which has full range of joint motion can hardly be compared with one which is stiff and deformed, however lifeless the muscles in the two might be. No claim is made of a cure for paralysis; there is no cure. There is no argument with the recognized concept of the relationship between the muscle fiber and the anterior horn cell of the spinal cord. A full appreciation of the value of the Kenny method can be obtained only by examination of the patients. The comfort of the patient, the warmth and life in the affected members, the absolute freedom from deformities, the

Fig. 5.—Same patient as in figure 4. Spasm of the hip flexors has been relieved by the Kenny treatment. Note the correction of the pelvic tipping.

receptiveness of the weakened muscles to stimuli, the ability to walk without supports in the presence of considerable weakness, the effortless movement of joints with smooth coordinated muscle function are all points which make the Kenny method of obvious value to those faced with the task of treating and salvaging the victims of this most dreaded disease. Paralysis is unfortunately a feature of the disease, but paralysis proves after all to be a minor consideration in most cases of infantile paralysis. Muscle spasm and incoordination are far more damaging to the bodily mechanics. The Kenny method when properly applied will reduce the crippling effects of the disease of infantile paralysis. Within the

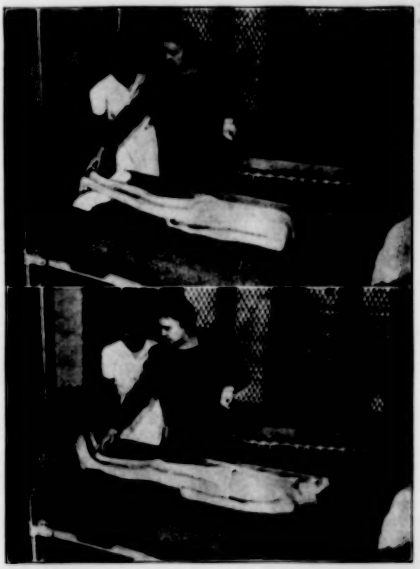

Fig. 6.—Convalescent poliomyelitis: basic position in bed maintained by patient during the course of treatment.

limits of the present knowledge and means of treatment of the disease it offers the patient the maximum assurance of recovery and restoration of function of his motor system. Deformities have been outlawed.

CONCLUSIONS

As a result of the demonstration carried out at the Poliomyelitis Clinic at the Minneapolis General Hospital for eighteen months beginning in the fall of 1940, it can be stated that:

1. Miss Kenny has conclusively shown that spasm is the condition affecting the muscles in the acute stage of infantile paralysis. Spasm is the cause of deformities. Spasm causes mental alienation of muscle, a pseudoparalysis occurring in the opposing muscles to those in spasm, in which those opposing muscles are divorced from the voluntary motor pattern and cease functioning. Spasm plus mental alienation causes incoordination of muscle action, resulting in further damage to the motor mechanism.

2. Miss Kenny has demonstrated a method of treatment for the symptoms she describes which diminishes the crippling after-effects of the disease of infantile paralysis.

3. At the end of eighteen months after beginning the Kenny treatment of a series of 26 patients in the acute and subacute stage it can be stated that these patients

have all made a far more satisfactory recovery than they would have made by any previously known method. No deformities have occurred, in spite of the complete omission of splinting.

4. The methods as demonstrated form a complete system for the treatment of the neuromuscular aspects of the disease.

5. Incorporation of the principles of the Kenny method with those of other methods for the treatment of infantile paralysis would prove unfeasible, as the Kenny method is based on previously unrecognized symptoms of the disease.

6. The method should be immediately adopted as the fundamental treatment of the disease of anterior poliomyelitis. As the condition affecting the muscles appears with the onset of the disease, it is imperative that treatment be instituted as soon as the diagnosis is established.

An additional series of 28 cases occurring in the fall of 1941, all coming under treatment in the acute stage, have presented very satisfactory progress to date. These cases will show even more remarkable recovery when viewed at the end of the treatment period. The fact that these cases were treated early and that the medical and nursing staff were better prepared to carry out treatment by virtue of the experience gained with the 1940 series will insure a maximum recovery in the 1941 series. These cases will be reported in detail later.

1945 Medical Arts Building.

THE EARLY TREATMENT OF POLIOMYELITIS

WITH AN EVALUATION OF THE SISTER KENNY TREATMENT

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It is our purpose in this paper to discuss the treatment of anterior poliomyelitis in the acute stage as it was carried on at Willard Parker Hospital in 1941. We wish to emphasize the fact that our treatment at the present time is entirely symptomatic—more specifically that we do not use serums,[1] sulfonamides, spinal fluid drainage, electrical ionization or stimulation, or any medication intended to alter the disease process. We accept the explanation that in virus diseases the virus has already attached itself to the body cell before clinical symptoms occur. In the case of poliomyelitis, this fact was demonstrated by Kramer and Parker[2] in 1933, when, in the anterior horn cells of monkeys inoculated with the virus, lesions were found before the animals showed clinical signs of the disease.

We are aware of the fact that the 1941 epidemic was comparatively small in this city, but we feel that the fewer cases offered opportunity for careful study.

From the Willard Parker Hospital.
Read before the Pediatrics Section, New York Academy of Medicine, March 12, 1942.

1. International Committee for the Study of Infantile Paralysis: Poliomyelitis, Baltimore, Williams & Wilkins Company, 1932, pp. 238-241.

2. Kramer, S. D., and Parker, G. C.: Experimental Poliomyelitis: Evidence of Early Involvement of the Central Nervous System, Proc. Soc. Exper. Biol. & Med. 30: 1417 (June) 1933.

A total of 71 patients was treated, ranging in age from 8 months to 28 years. The cases were classified as follows: nonparalytic, 12; bulbar, 5; bulbar with neck involvement, 6; bulbar and spinal, 5; spinal, 43. No patients with cerebral manifestations were seen, and no deaths occurred.

General therapeutic measures consisted of complete bed rest, adequate fluid and vitamin intake, and sedation as necessary. In the cases in which there was bladder paralysis, catheterization was indicated and, if necessary, an indwelling catheter was used until function returned. Constipation was frequently encountered, especially in patients with paralysis of the abdominal muscles, so that enemas were given as needed; but very few cathartics were used. Laboratory procedures included complete blood counts, urinalyses and examination of the spinal fluid.

In the treatment of patients with bulbar paralysis, painstaking nursing care was essential. Patients unable to cough up or to swallow mucus which had accumulated in the pharynx were placed in the prone position with the foot of the bed elevated. This position, as suggested by Durand,[3] Stimson[4] and others, is helpful in allowing the secretions to drain from the nose and mouth. Gentle suction with a soft rubber tube was also used. These patients were fed by a Levine stomach tube until the ability to swallow returned. If vomiting occurred, parenteral fluids were given. Because of the frequent misuse of the respirator in bulbar cases, a special point is made of the fact that in respiratory distress due to mucus accumulation the respirator is not only not indicated but definitely contraindicated. This treatment of cases with bulbar involvement is not new, but because of the danger of aspiration pneumonia we feel that it should be emphasized.

Of the 12 nonparalytic cases, 2 were treated by the Kenny method, and the remaining 10 were treated by complete bed rest and discharged at the end of three to four weeks, symptom free. Eight of the latter group were seen in the follow-up clinic four months after the onset of the disease and, though apparently free from paralysis, showed, on careful examination, the presence of spastic muscle groups with resulting deformity due to muscle imbalance. In 3 of the 8 cases there was unilateral spastic involvement of the back muscles, resulting in beginning scoliosis.

Forty-eight of our patients had spinal involvement. Included in this number are those with associated bulbar paralysis. The spinal involvement ranged from a paralysis of a single muscle group to an extensive paralysis including all four extremities, intercostals, the diaphragm and the abdominal muscles. Thirty-one patients were treated by orthodox methods from August 8 until September 23. On admission, a detailed muscle analysis was not done; hence, in the summary given, loss of function rather than single muscle involvement is described. Thus, of 27 patients, there were noted inability to flex the neck, 5; inability to abduct the arm, 5; inability to flex or extend the forearm, 16; finger and hand weakness, 3; gluteal weakness, 2; respiratory distress (due to paralysis of intercostals and diaphragm), 1; weakness of lower extremities, 22; inability to void urine, 3. As mentioned previously, in a given patient this involvement varied from a single paralysis to an extensive paralysis of several muscle groups.

3. Durand, Jay L.: Postural Treatment in Bulbar Infantile Paralysis, J. A. M. A. 93: 1044 (Oct. 5) 1929.

4. Stimson, P. M.: Common Contagious Diseases, ed. 3, Philadelphia, Lea & Febiger, 1940.

Toronto splints[5] and plaster casts were used for immobilization. In this group of patients atrophy, often pronounced, and deformities were noted during the second and third weeks. As is customary, these patients in the third to the sixth week of their disease were transferred to various orthopedic hospitals for further treatment. Seventeen were seen four to five months after being transferred. In every case we found limitation of motion due to tight and contracted muscles. In almost every instance there was gross substitution and muscle incoordination. That the contractures were apparently due to the immobilization may be demonstrated in the following illustration:

A 3 year old patient was admitted with complete paralysis of the deltoid and only minimal weakness of the biceps and triceps. Forearm extension and flexion could be performed actively by the patient. The involved arm was placed in a Toronto splint with the arm flexed at the elbow at an angle just over 90 degrees. Six weeks later the strength of these muscles was unchanged, i. e. the deltoid paralysis continued, as did the minimal weakness of the biceps and triceps. At that time the patient was able to flex the forearm, but neither passive nor active extension was possible beyond an angle of 90 degrees. The biceps tendon was somewhat rigid on palpation. These findings suggest that this limitation of motion was a result of continued biceps spasm during the immobilization.

Similarly, in all cases in which leg splints or casts were applied there was definite loss of motion at the knee due to contracture.

KENNY METHOD

As described in the American Literature by Cole and Knapp,[6] Sister Kenny emphasizes three cardinal symptoms in poliomyelitis: primarily muscle spasm and subsequently muscle incoordination and mental alienation. The symptomatic treatment of these three manifestations by means of hot packs, passive motion and muscle reeducation comprises the Kenny treatment.

So that this terminology may be clearly understood, the following illustration is given:

In a patient with apparent paralysis of the deltoid, one finds spasm in antagonistic muscles such as the pectoralis and the latissimus dorsi, and in substituting muscles such as the suprascapular group. If such a patient attempts to abduct the arm, the aforementioned spastic muscles contract further, resulting in an incoordinated movement. Continued active attempts at abduction result in further alienation of the involved muscle—the deltoid—and further tightening of the spastic muscles.

At the Willard Parker Hospital the Kenny treatment was carried out in the following way: A careful physical examination was done to evaluate the extent of weakness and the sites of hyperactive spastic muscles. Bed boards were placed under all mattresses, and a box was put at the foot of the bed, against which the patient was instructed to place the soles of his feet. He was encouraged to lie in bed with his extremities in the same position as in standing. No pillows were permitted. When the patient was lying on his abdomen, the box was removed and the feet were allowed to protrude over the end of the mattress. Hot packs were applied wherever spastic muscles were found. The entire back, from the head to the heels, was invariably included in the spasticity. These packs consisted of pieces of flannel or old blankets which were dipped in hot water, about 110 to 120 F., wrung dry by hand and applied directly to the involved part. These were then covered with a dry blanket. Packs were applied for fifteen minutes every two hours during the day and every four hours at night. During a fifteen minute period a pack would be reheated about four times. This technic varies somewhat in detail from Sister Kenny's present technic, but the principle is the same.

Passive exercises were started on the first day of the treatment; the range of motion extended to the point of pain or spasm. Several passive movements were executed for each involved muscle group twice daily. After three or four days, when pain and tenderness were greatly reduced, reeducation was begun. Patients over 3 years of age were allowed to feel the difference between a relaxed and a contracted muscle. The paralyzed or "alienated" muscle was then indicated and attention called to its point of insertion. When the involvement was unilateral, this step was often simplified by using the nonparalyzed side for comparison and demonstration. During the passive movements the patient was instructed to relax completely, focus his attention on the selected muscle, especially its insertion, and try to establish a mental awareness of the action of that muscle. When a muscle responded during passive exercises, gradually increasing tone in the muscle and its tendon was noted by the examiner. In regions where the tendons lie close to the surface, such as the dorsiflexors of the feet and toes, this increasing tone was visible.

At the end of the passive exercises, the patient was permitted to attempt one active movement. When substituting groups contracted during passive or active movements, the patient was instructed to relax and, if he was unable to cooperate, reeducation was abandoned for that day and more frequent hot packs were applied. At the onset, muscle reeducation was carried out twice daily and, as the patient improved, once daily. The range of passive motion was gradually increased as pain and spasm subsided. Hot packs were given during this entire period and complete bed rest continued. All active movements were assisted, and were not performed against resistance or gravity. During our period of observation, which was up to two and one-half months, many muscle groups remained under this regimen, while others were allowed to progress to the stage of independent active motion. The indications used at Willard Parker Hospital for beginning this next state were:

1. No evidence of spasm during full range of passive motion in (*a*) the selected muscle or muscle groups, (*b*) antagonistic groups, (*c*) substituting groups.

2. Ability to perform a coordinated active movement without substitution.

In this arbitrarily named second stage of treatment the hot packs were discontinued and more activity was permitted. If, at any time, spasm recurred in the selected group or related muscle groups, or if substitution was noted, the first stage of treatment was resumed. Careful observation was essential throughout the entire period of hospitalization so that beginning spasm in previously uninvolved areas might be detected and treated early. Especially important was that time when weight bearing had first been permitted.

Extent of improvement was judged by absence of atrophy and substitution, as well as by the return of function and strength.

5. Supplied by the National Foundation for Infantile Paralysis.
6. Cole, W. H., and Knapp, M. E.: The Kenny Treatment of Infantile Paralysis, J. A. M. A. **116**:2577-2580 (June 7) 1941.

OBSERVATIONS ON THE KENNY TREATED PATIENTS

On September 23 the Kenny treatment was started at Willard Parker Hospital. Eventually all patients present in the hospital at that time and all subsequent new admissions were included, giving a total of 28 cases, which were classified as follows: nonparalytic, 2; bulbar and spinal, 4; bulbar with only neck involvement, 5; spinal, 17. Fourteen of these patients received the treatment from admission; the remaining 14 were started at times which varied from the first to the seventh week of illness. So that a comparison may be made of the total involvement of this group with that of the earlier group which received orthodox treatment, the following summary is presented. (A detailed analysis of the paralytic and spastic involvement is given in the individual case histories.) Thus, in 26 paralytic cases, there was noted inability to flex the neck, 12; inability to abduct the arm (paralysis of entire shoulder girdle), 5; inability to flex or extend the forearm, 10; weakness of intrinsic finger and hand muscles, 1; respiratory distress (intercostals 2, diaphragm 2), 4; pronounced scoliosis (quadratus lumborum weakness), 1; paralysis of the abdominal muscles, 6; paralysis of the lower extremities, 20.

Of the 28 patients, 2 were nonparalytic. One (patient 44) showed pronounced spasm of the dorsum of the neck, the back and the hamstrings, which responded to treatment within three weeks. Three months after the onset of the disease there was no evidence of scoliosis. There was no follow-up on the other.

Two patients (58 and 59) showed an interesting picture. Both were boys, 13 and 19 years of age, respectively, with well developed muscular systems. On admission, 1 had minimal weakness of the abductors of the left thigh, while the other had minimal weakness of the right quadriceps, hamstrings and gastroconemius. In neither of these patients could weakness be detected at the end of the second week of the illness. Though the clinical course was extremely mild, both patients showed such severe spasm of the dorsum of the neck, the back and the hamstrings that active and passive flexion of the trunk was impossible. These patients received hot packs during the first two weeks, and thereafter the packs were supplemented with one to three hot baths daily. In the sixth week of the illness these patients were able to flex the trunk when the knees were extended. This action at that time, however, was still limited greatly by the spasm.

In 12 cases there was inability to flex the neck and severe spasm of the dorsum of the neck. Five of these were bulbar cases, 4 were spinal cases and 3 showed bulbar and spinal involvement. In this group the date of onset varied from August to December. The two latest patients are still showing signs of improvement, while the remaining 10 patients have shown good to excellent return of function and power. Atrophy was seen in 2 patients in whom the Kenny treatment was begun in the fifth and seventh weeks of illness. It is interesting to note in this group that the extent of improvement seems directly proportional to the time of introduction of the Kenny treatment; i. e., in those patients so treated from the onset of their disease, lack of atrophy and substitution is a constant observation.

There were 4 patients with complete deltoid paralysis. One of these (patient 67) had extensive paralysis of the entire upper extremity, including the shoulder girdle, and showed spasm in the pectoralis, latissimus dorsi and triceps on the affected side. This presence of spasm in completely paralyzed muscles was noted frequently. At the end of seven weeks this patient had complete range of passive motion of the involved arm but continued to show complete paralysis. However, at that time beginning contractions could be felt in the involved muscles during passive exercises. When seen in the twentieth week of the disease, there was beginning return of function in the muscles of the hand and forearm. Two patients (53 and 54) with deltoid paralysis had contractions on passive motion in the second and third weeks of the disease, and these patients showed return of deltoid function four months after the onset with minimal weakness and substitution. The fourth patient in this group (patient 63) had congenital hemangiomas of the involved arm, and at the time of discharge there had been no return of deltoid function.

There were 10 patients with paralysis of the dorsiflexors of the foot. At the end of four months, 2 of these patients (68 and 70) still showed complete paralysis. However, there was minimal atrophy and substitution, and no contracture of the achilles tendon. The other 8 patients had return of function. At the end of four months there seemed to be fair to good return of strength in all the muscles. Only 1 patient (patient 62) showed a deformity which was minimal in the third month. This patient had been admitted in the second week of his disease with beginning contracture of the achilles tendon. During the treatment this deformity became less apparent. It is interesting that his clinical course at home had been mild and that the diagnosis of poliomyelitis was not suspected until a limp was noted when the child was allowed out of bed.

Three patients (55, 61 and 66) had apparent intercostal paralysis with resulting difficulty in breathing. All had pronounced pectoral spasm. The respiratory rate of 1 of these patients remained at 12 per minute for a period of over eighteen hours. Frequent packs were applied to the spastic pectoral muscles. Coincident with the relaxation of these muscles, as determined by passively abducting the arms, there was return of normal chest excursion.

Four patients had pronounced paralysis and 3 showed some weakness of the anterior abdominal muscles. It was in this group of patients that persistent constipation was noted. We feel that involvement of the abdominal muscles is easily overlooked in the acute stage, as evidenced by its infrequent mention in many of the detailed reports of larger epidemics. Because of the persistent spasm of the back and hamstrings, return of function in the abdominal muscles is difficult to evaluate at this time.

One patient (patient 57) presented a decided left lumbar scoliosis on admission. This was associated with spasm of the right quadratus lumborum and apparent paralysis of the left quadratus lumborum. At the end of three weeks there was no evidence of scoliosis when the patient was at rest, and at the end of four months there was no deformity seen when the patient was in the sitting position.

Fourteen patients had paralysis of the thigh muscles, including the quadriceps, hamstrings, adductors and abductors. Since the leg involvement was bilateral in some patients a total of 20 lower extremities were involved. Only 1 of these patients failed to show any return of function after four months. No limitation of passive motion and hence no contracture deformities were found in this group four months after onset. Two of the patients have minimal atrophy. As has been

pointed out by Sister Kenny, spasm of the adductors and of the sartorius was frequently detected in this group, even when these spastic muscles had complete loss of power and function.

Ten patients were seen with involvement of arm muscles, usually biceps and triceps paralysis, with supinator and pronator weakness. Only 1 patient (patient 67) failed to show appreciable return of function. In this case paralysis of the deltoid was present and was described with that group of cases. The remaining 9 patients, seen four months after the onset, showed return of useful function and strength. Movements were well coordinated, and no spasm or substitution was seen.

It is still too early to make any statement as to the eventual recovery in these 26 paralytic cases. However, the following observations have been summarized:

1. Spastic muscles were found in all patients. This spasm was noted in otherwise uninvolved muscles as well as in weak and paralyzed muscles. It was relieved by hot packs.

2. In general, the return of unrestricted passive motion took place weeks and months earlier than when orthodox treatment with splinting was used.

3. Complete comfort, at rest, was enjoyed by all patients after one to three days of hot packs. Older patients, especially those who had been in splints, remarked on the comforting effect. Sedation was practically never necessary in this group.

4. In performing passive exercises with a completely flaccid muscle, the examiner would feel tone in that muscle long before the patient became aware of it, and frequently several weeks before the patient had any voluntary control over the muscle.

5. During the period of recovery the patient frequently illustrated what Sister Kenny calls "mental alienation." Although able at the end of one day's exercises to perform a coordination action with a given muscle or muscle group, the patient would completely forget on the following day how that action was performed. However, after several passive motions the patient would again remember the action.

6. In 4 patients under 3 years of age, no attempt at substitution was noted. When muscle function returned in these patients, coordinated movements were seen.

7. While six to nine packs in twenty-four hours of the type described were adequate for relaxation, three to four were not, as was evidenced when there was a temporary diminution in the nursing personnel. During this time an increase in the amount of spasticity was noted in practically every patient.

8. The tendency toward atrophy and deformity was minimal in this group. In fact, it was rarely seen in patients treated from the onset of the disease. The general condition of the skin and muscles was excellent. No burns occurred.

CASE HISTORIES

Orthodox Treatment

Nonparalytic

Case 1.—R. E., a 16 year old white youth, admitted on Sept. 4, 1941 with a three day history of sore throat, fever up to 104 F., pain in back of neck, general malaise, diplopia, and a constricting feeling in the throat, had had a left mastoidectomy in 1925, repeated in 1936. He had slight cyanosis of the lips and finger tips, absent ankle and knee jerks and upper abdominal reflexes, pain in the lumbar spine on flexing the head; no weakness. There was a low grade fever for one week; the course otherwise was uneventful. Treatment, bed rest. Spinal fluid, 100 cells per cubic millimeter; 98 per cent monocytes; protein 29 mg. per hundred cubic centimeters. Discharged, September 19. Follow-up, Dec. 17, 1941, occasional difficulty in swallowing.

Case 2.—F. C., a 10 year old white boy, admitted on Aug. 7, 1941 with a three day history of headache, loss of appetite, vomiting and pain in the back on flexing the neck, had slight nuchal rigidity; temperature, 101 F.; no absent reflexes. The course was afebrile after the first day. Treatment, bed rest. Spinal fluid, August 5, 270 cells per cubic millimeter; 60 per cent lymphocytes; 40 per cent polymorphonuclears; protein 27 mg. per hundred cubic centimeters; August 8, 26 cells per cubic millimeter; 100 per cent monocytes; protein 78 mg. per hundred cubic centimeters. Discharged August 19. Follow-up, Dec. 22, 1941, right hamstring "tightness" on trunk flexion; left shoulder lower than right; slight right dorsal scoliosis.

Case 3.—J. O., a 6 year old white girl, admitted to the hospital on Aug. 17, 1941 with a two day history of stiff neck, vomiting, fever, loss of appetite and inability to "move the legs" on the day prior to admission, had thick speech, no weakness; biceps reflexes were diminished but equal; the right triceps reflex was absent, the left triceps reflex diminished; ankle jerks and knee jerks more equal and active. A low grade fever continued sporadically for nineteen days. Treatment, bed rest. Spinal fluid, August 17, 160 cells per cubic millimeter; 60 per cent lymphocytes; 40 per cent polymorphonuclears; protein 39 mg. per hundred cubic centimeters. Discharged September 7. Follow-up, left sternomastoid smaller and weaker than right.

Case 4.—D. N., an 11½ year old white girl, admitted to the hospital on Aug. 22, 1941 with a six day history of fever, headache, stiff neck, vomiting and drowsiness, did not appear acutely ill. There was slight nuchal rigidity, with mild pharyngeal injection, absent right abdominal reflexes and no weakness. There was a low grade fever for one day. Treatment, bed rest. Spinal fluid, August 29, 20 cells per cubic millimeter; 100 per cent monocytes; protein 26 mg. per hundred cubic centimeters. Discharged September 2. Follow-up, Dec. 30, 1941, physical examination negative.

Case 5.—A. K., a 16 year old white boy admitted to the hospital on Aug. 29, 1941 with a two day history of fever, headache, stiffness of neck and back and nausea, had fever up to 102 F. for three days and persistent neck stiffness. Treatment, bed rest. Spinal fluid, 160 cells per cubic millimeter; 100 per cent monocytes; protein 55 mg. per hundred cubic centimeters. Discharged October 4. Follow-up, Dec. 22, 1941, spasm of right gastrocnemius, left sartorius and left hamstrings; spasm of dorsum of neck.

Case 6.—D. D. (brother of G. D., patient 22), a 15 year old white boy, admitted on Sept. 5, 1941 with a two day history of fever and headache, had nuchal rigidity and bilateral hypoactive knee jerks. He had fever the first day. Treatment, bed rest. Spinal fluid, 75 cells per cubic millimeter with 98 per cent monocytes; protein 36 mg. per hundred cubic centimeters. Discharged September 25. Follow-up, Dec. 17, 1941, occasional pain and spasm in right thigh adductors; spasm of hamstrings, dorsum of neck, trapezius, sternomastoids and platysma.

Case 7.—M. A., a 14 year old white boy, admitted Sept. 21, 1941, the fifteenth day of illness, became ill with sore throat and general malaise, the temperature rising to 102 F. during the first week. There was slight nuchal rigidity. The course was afebrile. Treatment, bed rest; occasional hot packs during the fourth week of illness. Spinal fluid, 25 cells per cubic millimeter; 100 per cent lymphocytes; protein 78 mg. per hundred cubic centimeters. Discharged on October 7. Follow-up, Dec. 22, 1941, patient complained of "occasional tightness" of right hamstrings; left shoulder lower than right; beginning right dorsal scoliosis; mild spasm of hamstrings.

Case 8.—P. B., a 9 year old white girl, admitted on Aug. 18, 1941 with a three day history of fever, sore throat, vomiting, and pains in both arms and the neck, had a moderately injected pharynx. The temperature rose to 101 F. on the first day. Treatment, bed rest. Spinal fluid, 105 cells per cubic millimeter; 90 per cent monocytes; protein 45 mg. per hundred cubic centimeters. Discharged on August 30. Follow-up, Nov. 5,

1941, absent right knee jerk; spasm of sternomastoids. Dec. 17, 1941, poor posture; slight dorsal curvature to the right on flexion.

CASE 9.—S. R., a 12 year old white girl, admitted on Sept. 18, 1941 with a three day history of headache, dizziness and fever, had nuchal rigidity. There was a low grade fever for three days. Treatment, bed rest. Spinal fluid, 70 cells per cubic millimeter; 95 per cent monocytes; protein 63 mg. per hundred cubic centimeters. Discharged on Oct. 4, 1941. No follow-up.

CASE 10.—R. McC., an 8 year old white girl, admitted on Sept. 25, 1941 with a seven day history of fever, sore throat and stiff neck, had slight nuchal rigidity. The temperature rose to 102 F. for five days. Treatment, bed rest. Spinal fluid, 75 cells per cubic millimeter; 100 per cent monocytes; Pandy test positive. Discharged on Oct. 10, 1941. No follow-up.

BULBAR

CASE 11.—E. S., a 4 year old white girl admitted on Sept. 22, 1941 with a three day history of pains in the arms and legs, general malaise and nasal regurgitation, had been given 35 grains (2.25 Gm.) of sulfadiazine prior to admission. Tonsillectomy had been done fourteen days before onset of the disease. The patient was acutely ill; there was nasal regurgitation; speech was nasal. The temperature was up to 101.6 F. for three days. Treatment was symptomatic as described. Feedings were given by the Levine tube for five days. Spinal fluid, 80 cells per cubic millimeter; 100 per cent monocytes; protein 18 mg. per hundred cubic centimeters. Discharged on Oct. 7, 1941. No follow-up.

CASE 12.—L. F., a 14 year old white girl, admitted on Sept. 17, 1941 with a three day history of nausea, vomiting, dizziness, headache, sore throat and inability to swallow, was acutely ill; there was nuchal rigidity; paralysis of the left palate was present. Speech was nasal. The temperature rose to 102 F. for five days. On the fifth day the respirations gradually became depressed and finally ceased for forty-five seconds. An immediate lumbar puncture was performed and a small amount of spinal fluid removed, not under increased pressure. Caffeine was given. The patient responded and after a twelve hour period the respirations were within normal limits. Left facial paralysis was noted on the ninth day. Nasal speech persisted and was present at the time of discharge. Treatment was symptomatic; feedings were by the Levine tube for four days. Spinal fluid, 140 cells per cubic millimeter; 90 per cent monocytes; protein 68 mg. per hundred cubic centimeters. Discharged on Oct. 8, 1941. No follow-up.

CASE 13.—J. B., a 13 year old white boy, was admitted on Sept. 1, 1941 with a six day history of nausea and vomiting and a three day history of stiff neck and sore throat. There were nuchal rigidity, nasal voice, nasal regurgitation and paralysis of the right palate. The temperature rose to 102 F. for three days. Right facial weakness was noted on the twenty-fifth hospital day. Treatment was symptomatic; feedings were given by the Levine tube for six days. Spinal fluid, 50 cells per cubic millimeter; 100 per cent mononuclears; protein 42 mg. per hundred cubic centimeters. Discharged on September 24. Follow-up, Dec. 22, 1941, nasal speech; weakness of right palate; right lower facial weakness; weakness of both sternomastoids, left weaker than right; substitution noted on neck flexion; weakness of lower abdominal muscles.

CASE 14.—A. H., a 10 year old white boy, was admitted on Aug. 15, 1941 with a two day history of vomiting, headache, stiff neck, nasal speech and difficulty in swallowing. There were slight nuchal rigidity, mild pharyngeal injection, nasal voice, paralysis of the left palate and nasal regurgitation. A low grade fever persisted for three days. Treatment was symptomatic; feedings were given by the Levine tube for four days. Spinal fluid, 38 cells per cubic millimeter; 80 per cent polymorphonuclears; 20 per cent lymphocytes; protein 39 mg. per hundred cubic centimeters. Discharged to convalescent home on September 25. Follow-up, Dec. 17, 1941, revealed that occasional "pins and needles" sensation in both lower extremities associated with weakness and "muscle pain" in right thigh had been noted by the patient. There were weakness of the left palate and slight rotation of the dorsal spine to the left, not notable after exercise.

CASE 15.—Z. M., a 10 year old white boy, admitted on Sept. 10, 1941 with a five day history of headache, fever, pain in the back and nasal regurgitation, had nuchal rigidity, weakness of the right palate and nasal regurgitation. The temperature rose to 101 F. for three days. Treatment was symptomatic. Levine tube feedings were not necessary. Spinal fluid, 170 cells per cubic millimeter; 95 per cent mononuclears; protein 45 mg. per hundred cubic centimeters. Discharged on October 2. Follow-up, Dec. 17, 1941, stuttering had been noted since discharge. The posture was poor; there was weakness of the right palate.

BULBAR WITH NECK WEAKNESS

CASE 16.—E. B., an 11 year old white boy, admitted on Sept. 11, 1941 with a four day history of headache, vomiting, stiff neck, difficulty in swallowing and nasal speech, was acutely ill; right palatal paralysis was present and the gag reflex was absent. Temperature rose to 101.2 F. for four days. Sternomastoid weakness was noted on September 28. Feedings were given by the Levine tube for eight days. Treatment was symptomatic. Spinal fluid, 34 cells per cubic millimeter; 100 per cent monocytes; protein 39 mg. per hundred cubic centimeter. Discharged on Oct. 5, 1941. No follow-up.

BULBAR AND SPINAL

CASE 17.—E. R., a 6½ year old white girl, admitted on Aug. 16, 1941 with a three day history of headache, stiff neck, sore throat and difficulty in speaking, was acutely ill; right palatal weakness, a loud systolic murmur over the entire precordium and some cardiac enlargement were present; there was no difficulty in swallowing. Temperature rose to 102 F. for two days. Weakness of the anterior abdominal muscles had been noted during the last week. Treatment was symptomatic; parenteral fluids were given. Spinal fluid, 70 cells per cubic millimeter; 80 per cent lymphocytes; protein 28 mg. per hundred cubic centimeters. Discharged on Aug. 29, 1941. Follow-up, Dec. 11, 1941, spasm of the back muscles and weakness of the abdominal muscles; patient wearing a surgical corset for weakness of the anterior abdominal muscles.

SPINAL

CASE 18.—L. L., a 7½ year old white boy, admitted on Aug. 13, 1941 with a three day history of stiff neck, fever, constipation and weakness of the right arm, had absent left biceps and both triceps reflexes, weakness of the right biceps and triceps, poor grip and weakness of the interossei. The patient was placed on a Bradford frame with the right arm placed in a Toronto splint; arm removed every four hours for "skin care." There was beginning return of muscle power on September 4. Spinal fluid, 50 cells per cubic millimeter, 75 per cent lymphocytes; protein 32 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 13, 1941. Follow-up, February 1942, limitation of motion at elbow, weakness and atrophy of intrinsic muscles.

CASE 19.—S. S., an 18 month old white boy, admitted on Aug. 23, 1941 with an eight day history of fever, irritability and weakness of the right leg, had flaccid paralysis of the entire right leg with no atrophy or muscle tenderness. The course was afebrile. A plaster cast was applied to the right leg on August 27. Spinal fluid, 80 cells per cubic millimeter; 95 per cent lymphocytes; protein 18.8 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital Sept. 22, 1941. Follow-up, February 1942, good cosmetic result; fair return of function.

CASE 20.—M. R., a 3½ year old white boy, admitted on Aug. 18, 1941 with an eight day history of headache, stiff neck, irritability, fever and weakness of the right leg, had paralysis of the right leg and weakness of the left leg. Temperature rose to 100.4 F. daily for three and one-half weeks. Treatment, casts applied to both legs. Lumbar puncture was not done. Transferred to Orthopedic Hospital on Sept. 1, 1941. Follow-up, March 1942, atrophy of the right leg; shortening of the achilles tendon on the right; muscle power good; left leg normal.

CASE 21.—M. McL., a 17 year old white youth, admitted on Aug. 26, 1941 with a three day history of fever and stiffness of the neck and back, had nuchal rigidity, weakness of both quadriceps and both peroneal groups, weakness of the right thigh adductors and abductors and complete paralysis of the right

hamstrings; he was unable to lift either leg off the bed. Temperature rose to 103.2 F. for one week. Casts were applied to both legs. Spinal fluid, 42 cells per cubic millimeter; 50 per cent mononuclears; protein 83 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 20, 1941. Follow-up, March 1942, limitation of motion at the right knee and right hamstring contracture.

CASE 22.—G. D. (brother of D. D., patient 6), a 3 year old white boy, admitted on Aug. 28, 1941 with an eight day history of fever, pain in the back of neck and weakness of the right foot, had paralysis of the right lower leg. Temperature occasionally rose to 100.2 F. during the first two weeks. The patient was placed on a Bradford frame and the right leg placed in a Toronto splint. Spinal fluid, 72 cells per cubic millimeter; 70 per cent lymphocytes; protein 62 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital Sept. 26, 1941. Follow-up, March 1942, moderate atrophy of the right lower leg; shortening of the right achilles tendon.

CASE 23.—E. A. B., a 6 year old white girl, admitted on Aug. 28, 1941 with a three day history of vomiting, fever, headache and weakness of the left arm, had paralysis of the left deltoid, weakness of the upper trapezius, biceps and triceps, poor grip and inability to flex the head. Temperature rose to 103 F. for two days. The patient was able to lift the head on September 16. Treatment, Bradford frame; left arm in a Toronto splint. Spinal fluid, 160 cells per cubic millimeter; 100 per cent lymphocytes; protein 35 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 26, 1941. No follow-up.

CASE 24.—L. C., a 3 year old white girl, admitted Aug. 8, 1941 with a six day history of fever, irritability, numbness and finally paralysis of the left arm, had weakness of the entire left arm with slight power in the hand and fingers. There was improvement in the power of the grip during the hospital stay. Treatment, Bradford frame; Toronto splint to the left arm. Spinal fluid, 170 cells per cubic millimeter; 80 per cent mononuclears; protein 43 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 12, 1941. Follow-up, March 1942, limitation of motion at the elbow; power of muscles returning; gross substitution in abducting arm.

CASE 25.—A. B., an 8 year old Negro boy, admitted on Aug. 14, 1941 with a three day history of headache, abdominal pain and inability to walk on the right leg, had nuchal rigidity and complete paralysis of the right leg. Temperature occasionally rose to 100 F. Treatment, Bradford frame; right leg in a Toronto splint. Spinal fluid, 165 cells per cubic millimeter; 95 per cent monocytes; protein 47 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital Sept. 17, 1941. Follow-up, March 1942, limitation of motion at knee; atrophy of thigh and calf muscles; function poor; supports weight with decided limp.

CASE 26.—V. C., a 5 year old white boy, admitted on Aug. 16, 1941 with a five day history of pain, fever, vomiting and paralysis of the right arm, had complete paralysis of the right arm and shoulder, weakness of the entire left arm and shoulder, nuchal rigidity and inability to flex the neck. The course was afebrile. The patient was irritable until casts were applied. Treatment, cast applied which covered neck, both arms and trunk. Spinal fluid, 80 cells per cubic millimeter; 80 per cent lymphocytes; protein 29 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 23, 1941. Follow-up, March 1942, left upper extremity: atrophy, deltoid function fair, substitution with upper trapezius; right upper extremity: considerable atrophy, very slight deltoid function, flexion contractures of fingers, vascular changes in hand.

CASE 27.—Y. D., a 3½ year old white girl, admitted on Aug. 2, 1941 with a six day history of "sore throat," fever, weakness, inability to lift the left arm and pain in the abdomen, had complete paralysis of the left upper arm and forearm muscles and weakness of the left hand. Weakness of the right arm and neck developed during the first week of hospitalization. Temperature rose to 101 F. for three days and to 100.4 F. nightly for three weeks. The patient was placed on a Bradford frame with Toronto splints applied to both arms. Spinal fluid, 110 cells per cubic millimeter; 98 per cent monocytes; protein 73 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 25, 1941. Follow-up, February 1942, right arm essentially normal; poor cosmetic result of left hand, with some vascular disturbance; scapular rotation during abduction of arm; function poor; substitution noted.

CASE 28.—H. P., a 5 year old white girl, admitted on Aug. 21, 1941 with a five day history of "limping on right foot" and vomiting, had paralysis of the right iliopsoas and quadriceps and "tightness" of the right hamstrings and paralysis of the dorsiflexors. The course was afebrile. A cast was applied to the right leg. Spinal fluid, 60 cells per cubic millimeter; 100 per cent monocytes; protein 30 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Oct. 2, 1941. Follow-up, February 1942, abduction limp, shortening of the right hamstrings.

CASE 29.—H. M., a 16 year old white youth, admitted on Aug. 26, 1941 with a four day history of headache, stiff neck, weakness of both legs and inability to void, was acutely ill and had nuchal rigidity. Both legs were paralyzed completely and the bladder was distended. A retention catheter was applied from day of admission to September 6. Sulfathiazole was given in average doses to prevent possible urinary infection, and discontinued after twenty-four hours because of gross hematuria. Casts were applied to both legs. Spinal fluid, 200 cells per cubic millimeter; 100 per cent monocytes; Pandy test positive. Transferred to Orthopedic Hospital on Oct. 3, 1941. Follow-up, February 1942, quadriceps shortening; limitation of motion at knee; function poor.

CASE 30.—A. T. (brother of F. T., patient 31), an 8 month old white boy, admitted on Aug. 16, 1941 with a five day history of fever, irritability and "paralysis" of the left leg, was pale, malnourished and had left "foot drop" and nuchal rigidity. The course was afebrile. There was a progressive weight gain. A cast was applied to the left leg. Spinal fluid, 22 cells per cubic millimeter; 100 per cent monocytes; protein, 114 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Oct. 3, 1941. Follow-up, March 1942, considerable atrophy; left achilles contracture; shortening of the left hamstrings.

CASE 31.—F. T. (brother of A. T., patient 30, with significant family history: three siblings have a muscular dystrophy), a 3 year old white boy, admitted on Aug. 12, 1941 with a four day history of fever, weakness of the right leg and "incontinent of feces," whose calf muscles had been getting large during the year prior to admission but no weakness had been observed before present illness, was acutely ill and was unable to void. Nuchal rigidity and paralysis of the right leg were present. Bladder function returned one week after admission. Temperature rose to 101 F. for three days. Treatment, catheterization; Toronto splint applied for nineteen days, then cast was applied. Spinal fluid, 85 cells per cubic millimeter; 95 per cent monocytes; protein 34 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Oct. 10, 1941. No follow-up.

CASE 32.—H. T., a 17 year old white youth, with an eleven day history of nausea, vomiting, diarrhea, fever, headache and stiff neck, had been admitted to a local hospital on Aug. 18, 1941 and transferred to Willard Parker Hospital on August 21 when pain and paralysis of the lower extremities developed. Nuchal rigidity, bilateral spasm of the hamstrings and paralysis of both lower extremities were present. On August 24 respirations became shallow and labored, owing to diaphragmatic paralysis and intercostal weakness. On September 1 the intercostals were also paralyzed, as were the abdominal muscles. Loss of weight was rapid and the patient remained cachectic during the entire hospital stay. He was placed in a respirator on August 24 and was there continuously until September 26, when he was able to remain out of the respirator for thirty minutes to one hour at a time. During this period the patient's course was "stormy." Mucus accumulated in the pharynx, which the patient was unable to cough up. Frequent bouts of vomiting and abdominal pain occurred. On two occasions the patient appeared moribund and while in the respirator became cyanotic.

On October 15 hot packs were started to the entire body but given more frequently to the chest and abdomen. One week later, chest excursion was increased. At the onset of this

treatment the patient was "rigid" and could not be moved without pain. A gradual improvement in comfort and outlook was noted. During the first week in December, when some relaxation had been accomplished, an attempt at complete evaluation of the muscles showed complete paralysis of both lower extremities with the exception of the right sartorius and iliopsoas and left plantar flexors of the toes. The diaphragm and abdominal muscles were paralyzed. Chest excursion was greater on the left side than on the right. Accessory muscles of the neck and shoulders were used with each respiration. Muscles of the left upper extremity were good and those of the right fair. Contractures were noted throughout the entire body, so that passive motion to any degree was not possible. On December 20 the patient was removed from the respirator.

Examination of the spinal fluid showed 127 cells per cubic millimeter; 78 per cent polymorphonuclears; 22 per cent lymphocytes; protein 46.3 mg. per hundred cubic centimeters.

The patient was transferred to the Orthopedic Hospital on Jan. 20, 1942.

A follow-up examination was made in March 1942. Some weight gain was noted. The patient was able to roll over in bed. Accessory muscles of respiration were not used as extensively when the patient was at rest. Passive motion could be carried out to a greater degree. There was no pain. Atrophy was extreme. There was considerable shortening of the thigh adductors, hamstrings and pectoral muscles.

N. B.: This case is not included with those in which the Kenny treatment was given because until further relaxation takes place the necessary passive exercises and reeducation cannot be carried out.

CASE 33.—M. M., a 7 year old white boy, admitted on Sept. 15, 1941 with a five day history of sore throat, fever, pain and weakness of the right arm, was acutely ill, with nuchal rigidity, weakness of the right biceps, pectoralis, and intrinsic hand muscles. Temperature rose to 101.8 F. for five days. The patient was placed on a Bradford frame and a Toronto splint was applied. Spinal fluid, 110 cells per cubic millimeter; 55 per cent monocytes; Pandy test plus 1. Transferred to a private physician on Oct. 9, 1941. No follow-up.

CASE 34.—V. S., an 8 year old white boy, admitted on Sept. 26, 1941 with an eight day history of pains in both legs and lower part of the back, had extreme weakness of all muscles of both lower extremities. The course was afebrile. Hot pads were started on September 27; no passive exercises or reeducation. Spinal fluid, 6 cells per cubic millimeter (monocytes); protein 61 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital Oct. 6, 1941. No follow-up.

CASE 35.—H. P., a 5 year old white boy, admitted on Sept. 12, 1941 with a two day history of fever, abdominal pain and weakness of the left leg, had nuchal rigidity, paralysis of the left quadriceps and left iliopsoas and weakness of all other groups of muscles of the left leg. The course was afebrile. Treatment, Toronto splint applied. Spinal fluid, 125 cells per cubic millimeter; 95 per cent monocytes; protein, Pandy test plus 1. Transferred to Orthopedic Hospital on Sept. 25, 1941. Follow-up in March 1942 revealed considerable atrophy of the left thigh; limitation of motion at the left knee; slight right scoliosis; "tipped pelvis."

CASE 36.—D. F., a 14 year old white youth, admitted with a seven day history of nausea, vomiting, fever, stiff neck and weakness of the left leg, had nuchal rigidity, weakness of all four extremities and a slight diminution of chest excursion. The course was afebrile. Intercostal weakness was improved. Treatment, Bradford frame; both arms and both legs in Toronto splints. The spinal fluid report is not available. Transferred to private physician on Sept. 23, 1941. No follow-up.

CASE 37.—H. J., a 13 year old white youth, admitted on Aug. 22, 1941 with an eight day history of fever and pain in the legs and a one day history of paralysis of both legs and inability to void, was acutely ill, with nuchal rigidity, complete paralysis of both legs and a distended bladder. Bladder function returned after one week; the course was afebrile. Treatment, retention catheter in place for one week; sulfathiazole to prevent possible bladder infection; discontinued after twenty-four hours because of hematuria; Toronto splint to both legs. Spinal fluid, 103 cells per cubic millimeter; 50 per cent lymphocytes; protein 19.2 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 22, 1941. No follow-up.

CASE 38.—P. E., a 20 month old white girl, admitted on Aug. 13, 1941 with a five day history of sore throat, fever irritability, inability to stand and weakness of the left arm, was acutely ill, with weakness of the left arm and paralysis of both legs. Temperature rose to 100.4 F. daily for four weeks. At time of discharge, there was some return of function of the left forearm and limitation of passive motion at both knees. Treatment, Bradford frame; Toronto splints to both legs and left arm. Spinal fluid, 25 cells per cubic millimeter; 100 per cent monocytes; protein 58 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital Sept. 10, 1941. No follow-up.

CASE 39.—N. K., a 7 year old white girl, admitted on Sept. 10, 1941 with a two day history of inability to move the left leg, had slight nuchal rigidity, paralysis of the entire left leg including the gluteal muscles and weakness of the right leg. Temperature rose to 101 F. for three days. Treatment, Toronto splints to both legs. Spinal fluid, 165 cells per cubic millimeter; 98 per cent monocytes; protein 92 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 29, 1941. No follow-up.

CASE 40.—J. D., a 2 year old white girl admitted on Sept. 6, 1941 with an eight day history of fever, diarrhea, anorexia, listlessness and weakness of the right arm, was irritable and had paralysis of the right biceps, triceps and deltoid. Temperature rose to 101 F. for two days. There was some return of triceps and biceps function. Treatment, Bradford frame; Toronto splint to the right arm. Spinal fluid, 70 cells per cubic millimeter; 75 per cent monocytes; protein 22 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 25, 1941. No follow-up.

CASE 41.—J. K., a 4 year old white boy, admitted on Sept. 4, 1941 with a four day history of pain in the right leg, headache and nausea, had nuchal rigidity, moderate pharyngeal injection and paralysis of the right leg. The course was afebrile. Treatment, Toronto splint to the right leg. Spinal fluid, 126 cells per cubic millimeter; 100 per cent monocytes; protein 30 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 24, 1941. Follow-up in March 1942 revealed paralysis of right quadriceps; shortening of the right hamstrings; contracture of the right achilles tendon.

CASE 42.—P. D., a 3 year old white boy, admitted on Sept. 8, 1941 with a three day history of fever, anorexia, stiff neck, vomiting and weakness of the right leg, had paralysis of the right leg. Temperature rose to 100.8 F. for four days. Treatment, Toronto splint to the right leg. Spinal fluid, traumatic tap. Transferred to Orthopedic Hospital on Sept. 29, 1941. No follow-up.

CASE 43.—M. S., a 28 year old white woman, admitted on Aug. 31, 1941 with a six day history of anorexia, diarrhea, pain in both thighs and finally inability to stand, had nuchal rigidity, paralysis of both lower extremities and weakness of both deltoids. The patient was very obese. Temperature rose to 101 F. for four days. All extremities were placed in the ventral position and a low caloric diet was given. Spinal fluid, 300 cells per cubic millimeter; 100 per cent monocytes; protein 94 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Sept. 22, 1941. Follow-up in March 1942 revealed practically no function in muscles of lower extremities; limitation of motion at knee and ankle joints due to contractures.

KENNY TREATMENT
NONPARALYTIC

CASE 44.—I. S., an 11 year old white girl, admitted on Oct. 17, 1941 with a seven day history of fever, nausea, dizziness and stiffness of the neck and back, had been given sulfathiazole prior to admission for four days. She was moderately ill. There was spasm of the dorsum of the neck, back and hamstrings. Temperature rose to 103 F. for one week. Disappearance of spasticity occurred within ten days. Hot packs were applied to the entire back from the head to the heels from October 19 to October 30. Spinal fluid, 245 cells per cubic millimeter; 95 per cent monocytes; protein 40 mg. per hundred cubic centimeters. Discharged on November 1. Follow-up,

December 1941, "occasional cramps" in hamstrings and occasional back pain; no spasm noted on physical examination and no scoliosis.

CASE 45.—M. V., a 22 year old white woman, admitted on Sept. 23, 1941 with an eight day history of sore throat, headache and a one day history of stiffness of the neck, had a mild pharyngeal infection, with spasm of the dorsum of the neck and hamstrings. Spasm was relieved after seven days. Hot packs were applied to the dorsum of the neck and hamstrings from September 29 to October 7. Spinal fluid, 245 cells per cubic millimeter; 100 per cent monocytes; protein 37 mg. per hundred cubic centimeters. Discharged on Oct. 8, 1941. No follow-up.

BULBAR WITH NECK WEAKNESS

CASE 46.—W. K., a 7 year old white boy, admitted on Aug. 8, 1941 with a three day history of vomiting, inability to swallow, nasal regurgitation and pain and stiffness of the neck and back, was acutely ill and had nasal speech, nasal regurgitation, nuchal rigidity, inability to lift the head, and left palatal and left facial weakness. The temperature was up to 102 F. for four days. Feedings were given by the Levine tube for six days. The patient attempted to lift his head with pronounced substituting with the shoulders and platysma. The corners of the mouth were drawn downward. The sternomastoids were "thin bands." After three weeks of Kenny treatment, contractions were felt in the sternomastoids during passive movements. The sternomastoids gradually increased in size. Strength of contractions continued to improve but substitution persisted. Treatment was bulbar: symptomatic; Kenny treatment was started on September 23. Spinal fluid, 95 cells per cubic millimeter; 95 per cent monocytes; protein 73 mg. per hundred cubic centimeters. Follow-up, January 1942, function good; atrophy slight; substitution present.

CASE 47.—F. F., an 11 year old white girl, admitted on Aug. 21, 1941 with a three day history of fever, nausea, vomiting, nasal regurgitation and nasal speech, was critically ill and toxic; there was paralysis of the left palate and both sternomastoids. The patient's condition remained critical during the first week, with pronounced lethargy and fever up to 103 F. There was rather rapid improvement in the second week. Neck flexion was done with substitution, with the shoulders and platysma. Both sternomastoids showed atrophy, the left more than the right. Spasm of the hamstrings was noted on September 23. The Levine tube was used for six days. Hot packs were applied to the dorsum of the neck and hamstrings from September 27. Passive motion and reeducation were started on September 28. Spinal fluid, 160 cells per cubic millimeter; 95 per cent monocytes; protein 100 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 12. Kenny treatment continued. Follow-up, February 1942, function good; moderate atrophy in left sternomastoid; very slight amount of substitution.

CASE 48.—J. B., a 6 year old white boy, admitted on Oct. 7, 1941 with a four day history of headache, fever, nasal regurgitation and difficulty in breathing, was moderately ill; there was occasional nasal regurgitation; on October 11, weakness of the right palate and left sternomastoid. The temperature rose to 101 F. for four days. The patient was able to take fluids by mouth in small amounts. Improvement in sternomastoid function was noted during the first month. Hot packs, passive movements and reeducation were started on October 13. Discharged on November 8 with good function of both sternomastoids; no atrophy. Follow-up, Dec. 17, 1941, strength of sternomastoids unchanged; very slight spasm of the dorsum of the neck and the upper trapezius. The patient was referred to the orthopedic clinic for further care.

CASE 49.—G. T., a 4 year old white boy, admitted on Nov. 20, 1941 with a four day history of fever, sore throat, cough, hoarseness and difficulty in breathing, was acutely ill, with pronounced nuchal rigidity, nasal regurgitation and nasal speech, a large amount of mucus accumulated in the pharynx, occasional cyanosis, and left palatal weakness. Neck weakness on admission could not be evaluated. A bilateral purulent otitis media (hemolytic Staphylococcus aureus) developed on December 4. There was bilateral sternomastoid weakness, marked spasm of the dorsum of the neck and moderate hamstring spasm on December 2. During the third week in December, relaxation of the dorsum of the neck and hamstrings had been accomplished. Substitution—"cupping of the shoulders"—was noted. Voluntary contractions in the sternomastoids were noted in the first week in January. Movements were coordinated. Feedings were by the Levine tube for eighteen days. Hot packs were started on November 30. Passive motion and reeducation were started on December 2. Spinal fluid, 50 cells per cubic millimeter; 98 per cent monocytes; protein 56 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on January 19. Follow-up in February 1942 revealed continued improvement in strength of the sternomastoids; no atrophy and no substitution.

CASE 50.—R. O'D., a 22 year old white woman, admitted on Dec. 28, 1941 with a three day history of nausea, vomiting, stiff neck and nasal regurgitation, was acutely ill. The temperature was 104 F. There was a large accumulation of mucus in the pharynx, nasal regurgitation, spasm of the dorsum of the neck and right palatal weakness. Feedings were given by the Levine tube for five days. Pronounced incoordination on attempting neck flexion was noted soon after admission. The patient was always capable of sternomastoid contraction. Spasm of the dorsum of the neck subsided and recurred during the first week. Spontaneous painful contractions of the hamstrings were noted by the patient. Neck coordination improved rapidly, after relaxation of the dorsum of the neck during the third week. Kenny treatment was started on January 1. The patient was transferred to the Orthopedic Hospital on January 29. Follow-up in January 1942 revealed continued improvement; no atrophy; no substitution; nasal speech.

BULBAR AND SPINAL

CASE 51.—R. G., an 8 year old white girl, admitted on Sept. 7, 1941 with a seven day history of sore throat, fever, stiff neck, inability to swallow, incontinence of urine and nasal regurgitation, was dehydrated and critically ill; the temperature was 104 F. Nasal regurgitation, nasal speech and inability to flex the neck were observed. During the first five days the patient continued to appear critically ill. The temperature rose to 104 F. for five days. Feedings by the Levine tube and parenteral administration of fluids were given for five days. On September 15 the patient was able to flex the neck, but this action was performed awkwardly. The patient seemed unable to initiate the movement and would throw her head forward. After two weeks of Kenny treatment, smooth flexion of the neck was noted. Slight weakness of the abdominal muscles and loss of the normal lumbar curve were noted on October 17. Beginning left scoliosis was noted on November 12. Active left lateral trunk flexion was limited on December 9. The Kenny treatment was again instituted on December 10. The spinal fluid report was not available. The patient was transferred to the Orthopedic Hospital on December 12. Follow-up in January 1942 revealed improvement in the abdominal and back muscles; disappearance of scoliosis; neck function good.

CASE 52.—N. G., a 10 year old white girl, admitted on Sept 21, 1941 with a three day history of fever, stiff neck, drowsiness and difficulty in raising the head, had nuchal rigidity, thick speech, inability to raise the head, hamstring spasm and minimal weakness of the left palate. On September 8 there was paralysis of the right dorsiflexors of the foot. The temperature rose to 103 F. for four days. Nasal regurgitation occurred once on the second hospital day. Hot packs to the entire back were started on October 1 and reeducation two days later. Spasm of the neck, back and hamstrings responded during treatment. Spasm of the right gastrocnemius was persistent so that more frequent packs were used during the last week in the hospital. At the time of discharge, function and power had returned to the sternomastoid. Slight substitution was noted. There was no atrophy. Function and power returned in the right peroneal group and beginning return of function in the right anterior tibial. Spinal fluid, 130 cells per cubic millimeter; 95 per cent monocytes; protein 52 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 12. Follow-up, February 1942, neck flexion normal; continued improvement in dorsiflexion of the right foot with continued relaxation of the right gastrocnemius spasm.

CASE 53.—H. R., a 10 year old white boy, admitted on Sept. 18, 1941 with a two day history of "generalized aches and pains," vomiting, difficulty in swallowing, nasal regurgitation, abdominal pains and fever, had deviation of the tongue to left, right facial paralysis (peripheral type) and inability to cough or swallow. The temperature rose to 101 F. for three days. Parenteral fluids were given. Feedings were given by the Levine tube for twelve days. On September 22 weakness of the sternomastoids was noted and on September 25 paralysis of the entire left deltoid, biceps, triceps and forearm muscles. Kenny treatment was started on September 25. Contractions were felt in the deltoid during passive movements after one month. Function of triceps, biceps and forearm muscles returned during the first three weeks. At discharge there was weakness of the left deltoid and left triceps with spasm of the left upper trapezius noted during passive exercises. Spinal fluid, 105 cells per cubic millimeter; 75 per cent monocytes; protein 51 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on November 26. Follow-up in February 1942 revealed complete range of motion of the left arm with slight weakness of the left deltoid; residual right facial weakness; no atrophy.

CASE 54.—B. F., a 13 year old white girl, admitted on Sept. 26, 1941 with a four day history of fever, headache, pain in the back, nausea, epigastric pain, nasal regurgitation and weakness of the left arm, appeared moderately ill. Examination revealed left palatal weakness, spasm of the dorsum of the neck and back and hamstrings, nasal voice, weakness of the left triceps, biceps and forearm muscles, paralysis of the left deltoid and spasm of the left suprascapular group. The head was held toward the left. No nasal regurgitation was noted. Kenny treatment was started on September 26. Recurrent spasm of the left pectorals, upper trapezius and latissimus dorsi and both hamstrings occurred. There were incoordination and substitution on attempting left arm abduction. Contractions of the deltoid were felt during passive exercises after three weeks. Spasm of the left pectoral muscles responded to treatment after two months. On November 28 spasm of the erector spinae group on the left occurred, giving a beginning right lumbar scoliosis. Treatment for this was started immediately. Spinal fluid, 160 cells per cubic millimeter; 80 per cent monocytes; protein 74 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 12. Follow-up in March 1942 revealed good deltoid function, no limitation of motion; very slight atrophy of left shoulder.

SPINAL

CASE 55.—J. M., a 19 year old white youth, admitted on Sept. 10, 1941 with a six day history of pain in the back of the neck, vomiting, fever, weakness of the left arm and dyspnea, was moderately dyspneic. Examination revealed no cyanosis, cough good, no intercostal function, diaphragmatic action weak and irregular, ballooning of the upper abdomen with each expiration and weakness of both upper extremities. Both arms were placed in Toronto splints from September 10 to 28. The patient exhibited marked discomfort while in splints. On September 28 spasm was noted in both pectorals, left latissimus dorsi, left biceps, back and both hamstrings. There was weakness of the pectoral muscles and left biceps. Kenny treatment was started on September 28. Two weeks later pectoral spasm had been partially released and intercostal function returned. There was paralysis of the left serratus anterior with winged scapula. At the time of discharge there was fair function in the left deltoid. Passive abduction of the left arm was possible without substitution or spasm through 90 degrees; the right deltoid was normal. Winging of the scapula was less prominent, and there was less ballooning of the upper abdomen. Hamstring and back spasm had subsided. Spinal fluid, 85 cells per cubic millimeter; 100 per cent monocytes; protein 52 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 15. Follow-up in January 1942 revealed winging of the left scapula much improved; ballooning of the upper abdomen less prominent; spasm of the left pectorals minimal; left deltoid function good.

CASE 56.—C. S., an 8 year old white girl, was admitted on Sept. 9, 1941 with a five day history of diarrhea, fever, headache, abdominal pain, stiff neck and weakness of the right arm. The patient was afebrile. There were weakness of both arms and inability to flex the neck. Toronto splints were applied to both arms for three weeks. Kenny treatment was started September 27. The patient was very uncomfortable in Toronto splints. The arms were normal after one and one-half months but initiating of neck flexion was not possible. The patient frequently forgot from day to day how sternomastoid action was performed. At the time of discharge, slight substitution was noted during neck flexion. Spinal fluid, 125 cells per cubic millimeter; 100 per cent monocytes; protein 40 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 13. Follow-up in February 1942 revealed minimal weakness of the sternomastoids as tested against force; no atrophy; minimal substitution.

CASE 57.—C. O., a 9 year old white girl, admitted on Oct. 4, 1941 with a seven day history of fever, vomiting, constipation and pain in the right leg, was unable to extend the right leg on the day before admission. Examination revealed spasm of both hamstrings (right greater than left), spasm of the right gastrocnemius, weakness of the right quadriceps, dorsiflexors of the foot and gluteal muscles and spasm of the right quadratus lumborum and erector spinae group with marked scoliosis. The patient was unable to contract the left quadratus lumborum. The temperature rose to 100.2 F. for two weeks. Kenny treatment was started on admission. Scoliosis was not apparent after two weeks. Function of the right dorsiflexors returned during the first week and beginning return of right quadriceps function in the third week. Hamstring spasm persisted until the second month. At discharge there was complete range of passive motion, right quadriceps poor. Spinal fluid, 5 cells per cubic millimeter; 100 per cent monocytes; protein 55 mg. per hundred cubic centimeters. The patient was transferred to the Orthopedic Hospital on December 13. Follow-up in January 1942 revealed the right quadriceps improving in power; no atrophy, no substitution.

CASE 58.—V. C., a 13 year old white boy, admitted on Sept. 9, 1941 with a two day history of headache, fever and pain in the legs, knees and back, had slight weakness of both quadriceps and the right abductors of the thigh, and spasm of the neck, back and hamstrings. The temperature rose to 102 F. for four days. Both legs were placed in Toronto splints. Analgesics and sedatives were given. Right purulent otitis media was present during the first week. Spliuts were removed on September 22. Muscle power was good. Spasm persisted so that the patient was unable to sit up in bed. Kenny treatment was started on September 27. Hot baths were given two to three times a day in addition to packs from October 20. Slow relaxation of spasm was noted. At the time of discharge the patient had spasm of the back muscles. Spinal fluid, 180 cells per cubic millimeter; 100 per cent monocytes; protein 99 mg. per hundred cubic centimeters. Discharged on November 1. Follow-up in January 1942: Hot baths were continued at home; occasional "cramps" in the hamstrings; difficulty in climbing stairs; beginning right dorsal scoliosis. The patient was referred to the orthopedic clinic.

CASE 59.—M. K., a 19 year old white youth, admitted on Oct. 24, 1941 with a four day history of fever, stiff neck and weakness of the right leg, had spasm of the neck, back and hamstrings and minimal weakness of the right thigh muscles. Kenny treatment was started on admission. Spasm started to relax after two weeks. No weakness was detected at the end of one month. On discharge slight spasm continued in the back and hamstrings. Spinal fluid, 100 cells per cubic millimeter. The patient was transferred to the Orthopedic Hospital on December 13. Follow-up in February 1942 revealed that the back and shoulders were held somewhat stiffly in walking; slight persistent spasm of the back and hamstrings.

CASE 60.—F. F., an 8 months old white boy, admitted on Oct. 31, 1941 with a nine day history of fever, vomiting, constipation, stiff neck, "limpness" of the right leg and inability to sit up, had spasm of the dorsum of the neck and back and weakness of the right quadriceps and right hamstrings. The patient was afebrile. Kenny treatment was started on admission. Relaxation of spasm occurred during the first three weeks. At the time of discharge, the patient was again able to sit up. There was minimal weakness of the right lateral hamstrings. The right quadriceps was normal. Spinal fluid, 40 cells per cubic milli-

meter; 95 per cent monocytes; protein 67 mg. per hundred cubic centimeters. Discharged on Dec. 19, 1941. To be followed in the orthopedic clinic, no further follow up.

CASE 61.—K. Z., a 3 year old white boy, admitted on Oct. 7, 1941 with an eleven day history of sore throat, fever up to 105 F., pain in the neck, back and knees and weakness of the legs, had had epileptiform convulsions since infancy three to four times a year and speech defect. The child was critically ill and lethargic, with weakness of both legs. Examination one week after admission revealed paralysis of the abdominals and both quadriceps, weakness of other muscle groups of both lower extremities, poor neck flexion and irregularity in intercostal function. Spasm of the back and hamstrings was pronounced. Kenny treatment was started on admission. Spasm of the adductors and hamstrings was very persistent. Constipation was severe. Intercostal function was good after the second week. On discharge there were moderate weakness of the lower extremities and sternomastoids, paralysis of the abdominal muscles and persistent spasm of the dorsum of the neck, back and hamstrings. Spinal fluid, 57 cells per cubic millimeter; 100 per cent lymphocytes; Pandy test negative. The patient was transferred to Orthopedic Hospital on December 15. Follow-up in January 1942 revealed beginning contractions in the abdominal muscles during passive movements; persistent spasm of the back and hamstrings; neck flexion well performed; muscles of both lower extremities showed returning function.

CASE 62.—J. W., a 7 year old white boy, was admitted on Oct. 2, 1941 with a history of headache, fever, stiff neck, vomiting and abdominal pain. These symptoms subsided and on the seventh day the patient was allowed out of bed. At that time weakness of the left foot was noted. There was spasm of the left hamstrings and left gastrocnemius, with shortening of the achilles tendon. Contractions were felt in the dorsiflexors of the foot on active movements. Severe spasm persisted for one month. There was some limitation on motion on passive dorsiflexion. At discharge dorsiflexion was poor. Spinal fluid, 65 cells per cubic millimeter; 98 per cent monocytes; protein 34 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Dec. 15, 1941. Follow-up in January 1942 revealed continued improvement in dorsiflexion of the left foot and continued relaxation of spasm of the left gastrocnemius.

CASE 63.—M. J., a 12 year old white boy, admitted on Sept. 22, 1941 with a five days history of general malaise, anorexia, chills and fever and a two day history of inability to raise the right arm, had had since birth multiple hemangiomas of the right arm and shoulder and had received numerous sclerosing injections. On Aug. 24, 1941 excision of the right pectoral hemangiomas was performed. Coincident with the fourth day of the present illness, the patient had a secondary hemorrhage at the operative site. The right arm was tender and swollen, with many ecchymotic areas. Numerous nodules palpated along the course of the blood vessels. From the operative wound on the right side of the chest exuded serosanguineous material. (The patient had been admitted at the onset of the present illness to the hospital at which the operation had been performed. At that hospital the operative wound was opened and cultures taken which were found to be negative.) There were paralysis of the right deltoid and weakness of the biceps, triceps and forearm muscles. The blood pressure was 150/100 (both arms).

Complete bed rest was carried out with the arm on a pillow and the elbow flexed to an angle of 110 degrees for five weeks. Kenny treatment was started during the fifth week. Continued hemorrhage necessitated absolute immobilization. By the fortieth day, the operative wound had healed. At that time there was noted a biceps contracture, contracture of the forearm flexors and atrophy of the deltoid and shoulder girdle. The contracted biceps muscle was weaker than the triceps. After one month of the Kenny treatment extension of the forearm increased from 110 to about 160 degrees. All groups improved but the deltoid, which remained paralyzed. Hypertension was present at the time of discharge. Blood chemistry was normal and urinalysis was negative. Spinal fluid, 100 cells per cubic millimeter; 100 per cent lymphocytes; protein 80 mg. per hundred cubic centimeters. The patient was transferred to the urologic ward of a general hospital on Dec. 10, 1941 because of a suspicious pathologic condition revealed on an intravenous pyelogram. Follow-up revealed that the blood pressure had returned to normal during the third month after onset of the disease. No kidney disorder was found. The patient was being followed at the orthopedic clinic. Further follow-up was not available.

CASE 64.—L. A., a 2 year old white boy, admitted on Nov. 2, 1941 with a seven day history of fever, chills, stiff neck and paralysis of the left lower extremity, had spasm of the dorsum of the neck and back and flaccidity of the left lower extremity. The Kenny treatment was given from admission. (Varicella developed on November 27 and was associated with cervical adenitis.) Relaxation was noted at the end of the second week. All muscle groups showed a slow return of function. Spasm of the right iliotibial band was noted during the first week and remained "tight" until the end of the first month. At the time of discharge muscle power in the left hamstrings, thigh adductors, abductors and flexors was fair and poor in the quadriceps, gastrocnemius and dorsiflexors of the foot. Spinal fluid, 30 cells per cubic millimeter; 100 per cent monocytes; protein 40 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Jan. 19, 1942. Follow-up in February 1942 revealed slow improvement; there was no spasm, no contracture and no atrophy.

CASE 65.—A. C., a 2 year old white girl, admitted on Oct. 20, 1941 with a four day history of fever, listlessness, vomiting and weakness of the left foot, was afebrile and irritable and had weakness of the left quadriceps, gastrocnemius and gluteal muscles and paralysis of the dorsiflexors of the left foot and toes. Kenny treatment was started on admission. There was a return in all groups after one week. She stood well at one month and at the time of discharge her gait was normal. Spinal fluid, 65 cells per cubic millimeter; 100 per cent monocytes; protein 52 mg. per hundred cubic centimeters. Discharged on Dec. 19, 1941. Further follow-up was not available.

CASE 66.—R. B., an 8 year old white boy admitted on Oct. 17, 1941 with a seven day history of sore throat, fever, pain and stiffness of the neck and back and weakness of both legs, was critically ill, anxious and perspiring freely. Extreme weakness of both lower extremities, irregular chest excursion and slight weakness of both arms were present. Kenny treatment was started on admission. Frequent packs were applied to the pectorals. During the first two days the patient's condition became worse. Respirations dropped to 12 per minute and remained there for more than eighteen hours. During this period there was complete intercostal paralysis. At the end of the first week intercostal action had returned. This was coincident with the beginning of relaxation of the severe pectoral spasm. Spasm was also severe in the hamstrings and adductors of the thigh and back. Right abdominal muscles were completely paralyzed and those on the left were weak. There was constipation. At discharge all groups had some return of function but spasm of the hamstrings and back was still present. The intercostals were normal. Spinal fluid, 40 cells per cubic millimeter; 100 per cent lymphocytes; globulin negative. Transferred to Orthopedic Hospital on Dec. 12, 1941. Follow-up in February 1942 revealed continued improvement in all groups; right abdominals had beginning contractures on passive motion; spasm of back was persistent.

CASE 67.—J. L., a 6 year old white girl admitted on Oct. 22, 1941 with a three day history of pain in the back of the neck, fever, vomiting and weakness of the right arm, was acutely ill, with spasm of the dorsum of the neck, back and hamstrings and complete paralysis of the left arm and shoulder girdle. Temperature rose to 102 F. for two days. During the first week weakness of the right lower extremity and paralysis of the abdominal muscles were noted. There was occasional vomiting during the first three weeks. Constipation was persistent. Spasm was noted in the paralyzed left triceps, pectorals and latissimus dorsi as well as in the hamstrings and thigh adductors. The Kenny treatment was started on admission. After one month beginning return of function was noted in the left hand and forearm muscles. At discharge there was complete range on passive motion of all groups and contractions were felt in the abdominal muscles during passive exercises. Spinal fluid, 175 cells per cubic millimeter; 100 per cent monocytes; protein 47 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Dec. 13, 1941. Follow-up in March 1942 revealed

almost complete return of abdominal muscle power; grip of the left hand was good, the left shoulder was completely paralyzed with beginning contraction in the biceps and triceps on passive exercises; no atrophy; cosmetic result good.

CASE 68.—M. R., a 17 year old white girl, admitted on Oct. 22, 1941 with a four day history of headache, suprapubic pain, backache, fever, stiffness of the neck and paralysis of both lower extremities, had paralysis of the entire right lower extremity and weakness of the left lower extremity, paresthesias of the right lower leg and spasm of neck, back and hamstrings. Kenny treatment was started on admission. The patient was completely comfortable after twenty-four hours except for occasional paresthesias of the right leg. Power in the left lower extremity returned during the first two weeks. Spasm was noted in the paralyzed right thigh adductors. At discharge there was good range on passive motion at the right knee and ankle. There was minimal atrophy of the right calf muscles. Beginning contraction was noted in the thigh muscles on passive motion. Spinal fluid, 140 cells per cubic millimeter; 95 per cent monocytes; protein 52 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Dec. 13, 1941. Follow-up in March 1942 revealed good range on passive motion of the right leg; atrophy more pronounced than on discharge; quadriceps and hamstrings improving in function; beginning contractions in the gastrocnemius and peroneals on passive motion; beginning flexion deformity of the toes.

CASE 69.—M. M., a 13 year old white girl, admitted on Oct. 21, 1941 with a five day history of fever, stiffness of both legs and of the right arm, dizziness and amnesia, was moderately ill, with slight weakness of the right triceps, quadriceps and iliopsoas; severe spasticity of the dorsum of the neck, back, both biceps, hamstrings, adductors of the thigh; paralysis of the abdominal muscles and glutei; poor diaphragmatic excursion. The Kenny treatment was started on admission. General relaxation started after one week. The patient was able to void after eighteen hours, so that catheterization was unnecessary. Spasm of the hamstrings, biceps and adductors of the thigh and back persisted. There was beginning relaxation after one month. Constipation was persistent. There was beginning return of diaphragmatic and abdominal muscle function during the sixth week. At discharge there was complete range on passive motion in all extremities, moderate weakness of the thighs with continued spasm of the thigh adductors; abdomen poor. Spinal fluid, 110 cells per cubic millimeter; 100 per cent monocytes; protein 75 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Dec. 13, 1941. Follow-up revealed continued rapid improvement of the abdominal muscles; slight persistent back spasm; extremities normal.

CASE 70.—J. G., a 2 year old Negro boy, admitted on Nov. 2, 1941 with a nine day history of sore throat, fever, stiff neck and inability to walk, was moderately ill, drowsy, and was lying in opisthotonos. There were paralysis of both lower extremities, faint contractions in the right quadriceps gastrocnemius and dorsiflexors of the foot and severe spasm of the neck, back and hamstrings. The Kenny treatment was given from admission. Beginning relaxation of the back occurred on the third day. The patient was able to sit up during the fourth week. Return of function started in the third week. On discharge no return of function to the left dorsiflexors of foot and left gastrocnemius had occurred. There was full range of motion. Spinal fluid, 50 cells per cubic millimeter; 100 per cent monocytes; Pandy test 1 plus. Transferred to Orthopedic Hospital on Dec. 12, 1941. Follow-up in February 1942 revealed no function in the left dorsiflexors of the foot and no atrophy or contracture; other muscles showed return of function and power.

CASE 71.—H. J., a 5 year old Negro boy, admitted on Nov. 12, 1941 with a five day history of fever, vomiting, pain and weakness of the left leg, was moderately ill, with severe spasm of the left hamstrings. The thigh was held in flexion. There were severe spasms of the back of the neck, back and hamstrings, weakness of all groups of the left lower extremity and mild biceps spasm. The Kenny treatment was started on admission. Relaxation of the back and hamstrings was noted in one week. Severe spontaneous spasm of the right quadriceps was noted on the twenty-first day and remained for one week. At discharge there was minimal weakness of the left lower extremity muscles. Spinal fluid, 35 cells per cubic millimeter; 100 per cent monocytes; protein 46 mg. per hundred cubic centimeters. Transferred to Orthopedic Hospital on Dec. 15, 1941. Follow-up in March 1942 revealed a peculiarity in gait due to incoordination of the hamstrings.

COMMENT

It is difficult to measure differences in amounts of recoveries in the two groups of patients, but all those who have observed this group of patients and other groups treated in the orthodox manner are convinced that those who received the Kenny treatment are better off in (*a*) comfort, (*b*) freedom from atrophy and deformity, (*c*) rapidity of recovery and (*d*) possibly in extent of recovery.

CONCLUSIONS

1. At the present time only symptomatic treatment is indicated in poliomyelitis.

2. Patients with bulbar paralysis respond well to the treatment described.

3. All patients, both paralytic and nonparalytic, should be observed carefully and repeatedly for spasm, and treatment to relieve this symptom should be started immediately on the discovery of the spasm.

4. For patients presenting symptoms of spasm, weakness and paralysis in the acute stage of poliomyelitis, the Kenny treatment is the treatment of choice.

GYNECOMASTIA

A STUDY OF FIVE CASES

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The finding of 5 cases of gynecomastia within one division of soldiers and the fact that in each instance the man complained of inability to wear a pack because of this condition prompted us to restudy this problem.

The articles of Lewis and Geschickter [1] and Wernicke [2] give extensive bibliographies and adequately trace the disease down from its first description by Basedow in 1848 to the present. The cause of gynecomastia is still obscure except in that group of cases in which obviously associated endocrine disturbances are present, such as chorionepithelioma or teratoma of the testicle and tumors of the adrenal cortex. The great majority of cases, however, present no associated endocrine disturbance and in none of our cases could we find any abnormalities that might be causative of gynecomastia. There were no atrophied testicles nor undescended testes. Many authors [3] mention trauma as a causative agent; although only 1 of our patients gave a definite history of trauma, all the patients stated that the constant wearing of a pack aggravated their condition and caused additional enlargement of the breast.

The pathologic changes that we encountered were identical with those of chronic cystic mastitis in the

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1. Lewis, Dean, and Geschickter, C. F.: Gynecomastia and Virginal Hypertrophy and Fibroadenomas of the Breast, Ann. Surg. 100: 779 (Oct.) 1934.
2. Wernicke, H. O.: Gynecomastia, Surgery 5: 217 (Feb.) 1939.
3. Cole and Elman.[4] Wernicke.[2]

female, more commonly of the adenosis type. There was epithelial hyperplasia of the ducts with papillary proliferation in some sections and also periductal fibrosis corresponding to the hyperplastic phase of chronic cystic mastitis. In 1 case there were also areas familiar to the involutional stage of chronic cystic mastitis having cyst formation and flattening of the epithelium.

It is to be noted in the accompanying table that all the patients came to the hospital complaining of pain and swelling in the affected breast, being made worse by wearing an army pack, a strap of which puts pressure on the breast area. None of these men had evidence of discharge from the breast, although 1 reported that he had had such an incident five years before. Involvement was unilateral in all cases. In none of our cases was there evidence of endocrine disturbance.

Clinical Data on Five Cases of Gynecomastia

Patient, Age	Duration of Symptoms	History of Trauma	Unilateral or Bilateral	Endocrine Disturbance	Chief Complaint	Endocrine Therapy
A. 22	8 yrs.	None	Left	None	Pain and swelling in breast	None
B. 22	1 mo.	Bumped breast in baseball game	Right	None	Pain and swelling in breast and axilla	None
C. 34	7 yrs.	None	Left	None	Pain in breast; enlarged	Methyl testosterone 1 mg. daily for 1 month
D. 21	7 yrs.	None	Right	None	Enlarged, tender breast	None
E. 19	5 yrs.	None	Right	None	Enlarged, painful breast; discharge 5 yrs. previously	None

The treatment of gynecomastia resolves itself into two divergent schools of thought: those who believe that surgery is the method of choice in most cases [4] and those who believe that the great majority of cases will respond to the androgens, especially if the condition is bilateral.[5] Adair [6] feels that unless the condition responds to testosterone it cannot be called gynecomastia but mastitis, and the best treatment for the latter condition is hot compresses and scientific neglect. One of our patients received injections of testosterone for one month (C. in the table) without any amelioration of his symptoms and he was therefore subjected to surgery and a successful result was obtained.

The surgical procedure that we used in all our cases was a Warren type of incision in the lower lateral side of the breast through which the breast tissue was freed from its attachment to the pectoral fascia and skin and removed by blunt dissection. The nipple was preserved, thereby not producing a cosmetic deformity. The only precaution to be noted in doing this operation is that the skin can easily be button-holed in dissection of the breast tissue just underneath the nipple.

None of our cases corresponded to the definitions of true gynecomastia as set forth by Horsley [7] and Adair [6] as being similar pathologically to simple hypertrophy in the female and responding to testosterone therapy in all cases. The changes we found in all cases pathologically corresponded to chronic cystic mastitis, and the therapeutic effect to androgen therapy was nil. This may be explainable on the basis that gynecomastia, as thus defined, can be produced only by some endocrine disturbance and that this disturbance can usually be counteracted by the administration of the androgens. None of our patients showed any endocrine abnormality and we therefore should have expected to find changes only of a chronic inflammatory type. However, the fact that 4 of our patients dated the onset of their disease during the period of adolescence, a fact which all writers have noted,[8] will not permit us to dismiss completely some endocrine factor as contributing to the causation of the disease.

In arriving at a rationale for treatment, we cannot agree with Adair [6] that a soldier with this disease who is frequently exposed to the ridicule and censure of his associates and to the psychic trauma of his own flights of fancy, not to mention the obvious pain which he has to endure from the wearing of a pack, should be treated with neglect. He is just as much a casualty, as far as the army is concerned, as if he were suffering from a severe gunshot wound. We believe that endocrine therapy has no place in the treatment of the great majority of these cases. A case of bilateral gynecomastia or one in which there may be some glandular disturbance might warrant a therapeutic test with testosterone. The extended treatment necessary when the androgens are used, the frequency of remissions and the possibility that this expensive substitution therapy may have to be continued indefinitely greatly lessen its value, even if one grants that it may be successful in a sufficient number of cases to justify a trial. Surgical treatment, on the other hand, involves a fairly simple and only mildly incapacitating operation, with complete relief of both objective and subjective symptoms and a loss of time from duty of only ten days to two weeks.

CONCLUSION

1. Gynecomastia in army life is not as infrequent a disease as is generally supposed. Five soldiers were found to have sufficient symptoms to warrant hospitalization in one group of approximately 20,000 troops.

2. The etiology in our cases was not on an endocrine basis, nor were there any associated endocrine disturbances present, except that the condition of 4 or our patients developed during adolescence.

3. The pathologic changes were similar to those found in chronic cystic mastitis in the female.

4. Surgical treatment appears to be the most satisfactory method of handling this condition, both from the point of view of the patient and from that of the service.

4. Cole, W. H., and Elman, Robert: Textbook of General Surgery, ed. 3, New York, D. Appleton-Century Company.

5. Desmarest, E., and Capitain (Mme.): The Treatment of Mastopathies with Acetate of Testosterone (treated 17 cases of cystic mastitis and had good results in 16), Internat. Abstr. Surg. **65**: 310, 1937. Adair.[6] Wernicke.[8]

6. Adair, F. E.: A Consideration of Recent Additions to Clinical and Experimental Knowledge of Breast Conditions, West. J. Surg., Obst. & Gynec. **48**: 645 (Nov.) 1940.

7. Horsley, J. S.: Benign and Malignant Lesions of the Male Breast, Ann. Surg. **109**: 912 (June) 1939.

8. Lewis and Geschickter.[4] Horsley.[7] Adair.[6] Wernicke.[8]

ACUTE INFECTIOUS POLYNEURITIS

A DIAGNOSTIC PROBLEM DURING A POLIOMYELITIS EPIDEMIC

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The difficulties attendant to making a diagnosis of acute infectious polyneuritis during an epidemic of poliomyelitis were emphasized in a recent minor epidemic of poliomyelitis. Acute infectious polyneuritis was first described in 1908 by Laurens.[1] The original article of Guillain, Barré and Strohl[2] in 1916 defined the syndrome as one characterized by a slowly ascending paralysis, a normal cell count with increased protein of the cerebrospinal fluid and a favorable prognosis. The condition has most often been called Guillain-Barré's syndrome. Casamajor[3] emphasized the nominal usage because of the inadequacy of the various descriptive names applied to the condition. Yet, because of our reluctance to use proper names, we shall continue to call it acute infectious polyneuritis.

The necessity for differentiating between acute infectious polyneuritis and acute anterior poliomyelitis is more than an academic consideration. The all important question of prognosis is always uppermost in both the physician's and the parent's mind during an attack of either of these diseases. The prognosis of poliomyelitis in the presence of any degree of paralysis is always in doubt for a prolonged period. It is impossible for the physician to prognosticate as to the amount of residual paralysis that will be present when the final stages of the disease have been reached. On the other hand, as suggested by Guillain and Barré in 1916, a favorable prognosis can be made in infectious polyneuritis, predicting the absence of any residual paralysis after a period of months to one or two years.

A great deal of doubt has been cast on this license to present a favorable prognosis by Forster, Brown and Merritt.[4] They present 26 cases of polyneuritis with facial diplegia and show a mortality of 42 per cent. In this group there were 3 cases that might be included in a pediatric series. The range in ages was from 2 to 15 years. Two of these patients died and 1 evidently recovered completely. The highest spinal fluid cell count among the 3 cases was 11 cells per cubic millimeter, certainly within the normal range. The spinal fluid protein determinations are more controversial. In the 2 fatal cases the spinal fluid proteins were 68 mg. per hundred cubic centimeters and 9 mg. per hundred cubic centimeters; the former is only a slight rise (10 to 47 is normal)[5] and the latter is low, if anything. On the other hand, the 2 year old child who recovered showed a definitely increased protein to 363 mg. per hundred cubic centimeters.

Forster is justified in including these 2 fatal cases in his group presenting polyneuritis with facial diplegia. Viets[6] and Taylor and McDonald[7] use this terminology and describe similar cases, but if we are to accept Guillain's criterion of a "noteworthy hyperalbuminosis of the cerebrospinal fluid in the absence of cytological reaction" as diagnostic of infectious polyneuritis it is difficult to classify the first 2 cases in this discussion, while the third case, in which recovery evidently occurred, is typical. It is interesting to quote Guillain further in an article published in 1936:[8] "Our first communication established in cases of polyradiculoneuritis (infectious polyneuritis) of this type, first, the albuminocytological disassociation (increased cerebrospinal fluid protein with normal cell count) in the fluid, and second, the favorable prognosis. I have insisted repeatedly on the two characteristics of this syndrome."

Casamajor presented a series of 22 pediatric cases, 3 his own, 19 from the literature, all fairly typical of infectious polyneuritis and showing the typical albuminocytologic disassociation except in 4 cases. In 2 of these there was no report on the spinal fluid, 1 was reported as negative to the Pandy test for protein and in the last case the spinal fluid was reported entirely negative. In this series all cases except 1 as far as can be determined ended in recovery. The 1 patient who died had a virulent streptococcic infection of the throat. In Casamajor's 3 cases there was complete recovery in all. Casamajor has this to say about the prognosis of infectious polyneuritis: "the prognosis is favorable with recovery over a period of weeks or months, and there are usually no residual signs of paralysis although occasionally muscle atrophy, if present during the disease, persists."

Despite Forster's adverse report, and in view of Casamajor's review of the pediatric literature, we believe that it is reasonably possible to give a good prognosis in these cases. In our own cases, after the first overwhelming acuteness of the illness has subsided somewhat, we have not hesitated to give a good prognosis as to the eventual absence of residual paralysis.

The following 2 cases were seen during a mild epidemic of poliomyelitis. Fifteen cases of poliomyelitis were admitted to our wards over a period of a month and a half.

CASE 1.—C. P., a boy aged 3½ years, a private patient of Dr. De Sanctis, admitted June 17, 1941, awakened the day before admission crying because of his inability to get out of bed. When his mother stood him up he collapsed and complained of severe pain in his lower extremities. The child had not been exposed to acute anterior poliomyelitis. He had waded in water up to his knees the day before onset. A physician was called who noticed weakness of all four extremities, more in the lower extremities than in the upper ones and of greater involvement in the left extremity as compared with the right.

On admission the patient was restless and crying, showed no respiratory difficulties but was sweating profusely. The general physical examination was negative except for neurologic manifestations. The pupils were equal and regular and responded to light. Visual fields appeared grossly negative. All deep and superficial reflexes were absent, except for a one plus response in the left biceps, and there were normal cremasterics. No pathologic reflexes were present. The arms and legs were

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5. Levinson, Abraham, in Brennemann, Joseph: Practice of Pediatrics, Hagerstown, Md., W. F. Prior Company, Inc., 1937, vol. 4, chap. 2, p. 16.
6. Viets, H. R.: Acute Polyneuritis with Facial Diplegia, Arch. Neurol. & Psychiat. **17**:794 (June) 1927.
7. Taylor, E. W., and McDonald, C. A.: The Syndrome of Polyneuritis with Facial Diplegia, Arch. Neurol. & Psychiat. **27**:79 (Jan.) 1932.
8. Guillain, Georges: Radiculoneuritis with Acellular Hyperalbuminosis of the Cerebrospinal Fluid, Arch. Neurol. & Psychiat. **36**:975 (Nov.) 1936.

absolutely flaccid, the left arm still having some muscle tone. There was some movement of the fingers. Generalized hyperesthesia and muscle pain were present. He was unable to sit up. The red blood cell and white blood cell counts were normal and the sedimentation rate was slightly elevated. The Wassermann reaction of the blood and spinal fluid was negative.

The patient's temperature was never elevated except during an infection of the upper respiratory tract. Two days after admission he showed complete quadriplegia and bilateral weakness of facial muscles. There was no difficulty in swallowing. The pupils were unequal. The hyperesthesia persisted. His voice was nasal and he had difficulty in pronouncing the hard consonants. He remained mentally alert and cooperative. The child's condition continued approximately the same for ten days, at the end of which time some atrophy of the lower extremities was noticed, and there was a definite reaction of degeneration in all the extremities. The patient had also lost sphincter control. One month after admission the facial involvement had disappeared and the patient was able to arch his back, move the left arm slightly and control the right arm. Generalized improvement continued until discharge three months after admission, at which time the patient was able to sit up alone and use his arms to feed himself. He still had weakness of both legs and arms, although he was able to use all four extremities to a limited degree. The voice was definitely improved.

Treatment consisted of administration of vitamin B_1, 100 mg. parenterally every day for eleven days after admission, and of vitamin E, 24 mg. twice a day for two months after admission; splinting of the lower extremities to prevent contraction, and physical therapy starting one month after admission and continuing for one and one-half months. This consisted of tank treatment and under water exercise. The patient took great delight in this form of therapy and showed the most rapid improvement while under this treatment. This unfortunately had to be discontinued because of an intercurrent infection of the upper respiratory tract.

Case 2.—M. C., a girl aged 9 years, a private patient of Dr. Wenger, admitted Aug. 18, 1941, had been well until two weeks before admission. According to the mother, she caught a cold following an afternoon swim in a pool. Her temperature rose to 102 F. and she complained of "achy pains" in the muscles of the back and legs. Two days before admission the mother noticed that the child was not walking well. When the patient was taken to a private physician he advised admission to the hospital.

The patient was rather heavy set and appeared to handle herself quite well. General physical examination was practically

Table 1.—*Results of Examination of the Spinal Fluid in Case 1*

Date	Cells	Protein, Mg. per 100 Cc.	Sugar, Mg. per 100 Cc.
6/17	0	34.9	..
6/20	2	81.5	61
6/22	3	129.2	..
7/ 7	3	225.0	..
7/17	1	177.0	..
7/29	0	214.0	..
8/18	2	173.9	..
9/11	0	53.5	..

negative except for the neurologic manifestations. The pharynx was slightly injected. Circumferential measurements of opposite legs, thighs and arms were the same throughout. Musculature on the opposite extremities were comparable. The child had a definite weakness of flexion and extension of the left arm with difficulty in raising the arm above 90 degrees. The grasp of the left hand was weak. There was also weakness of extension and flexion of the left leg, with the additional weakness of plantar flexion and extension on the left. Judging of the gait was not attempted because of the request of the private physician not to have the patient walk. Superficial and deep reflexes were present and normal on admission. She had some difficulty in sitting up. The red blood cell and white blood cell counts were normal, and the Wassermann reaction of the blood and spinal fluid was negative.

The temperature was normal on admission and throughout the hospital stay. The involved parts became progressively weaker for approximately a week. Five days after admission she began to complain of pain in the muscles of the right calf and weakness of plantar flexion of the right foot. Reflexes at about this time were equal and active, except for an absence

Table 2.—*Results of Examination of the Spinal Fluid in Case 2*

Date	Cells	Protein, Mg. per 100 Cc.
8/18	20	183.6
8/25	9	151.0
9/ 5	7	134.0
9/17	2	102.0
9/29	3	62.0
10/ 9	3	91.5
10/11	3	76.0

of the right ankle jerk. From this point on the child continued to improve. Physical therapy in the form of light massage and under water exercise were started about one month after admission and continued daily for two weeks, with some improvement. A month and a half after admission the child was allowed up. Her gait appeared normal, but after two days she complained of pain in the muscles of the left calf. Because of this and the fact that her spinal fluid protein showed a sudden increase at this time, she was put back to bed. On discharge the right ankle jerk could not be elicited and she still showed weakness of the plantar flexion of the right foot and plantar extension of the left foot.

These 2 cases emphasize the difficulties of differentiating between acute infectious polyneuritis and poliomyelitis, especially when the former is atypical, as in the second case. When the case is seen during a poliomyelitis epidemic the diagnostic difficulties are certainly multiplied many fold.

Clinically, the two diseases appear similar but when examined more minutely do differ. The history of the two conditions is usually that of a slow progression of symptoms and signs, although the onset occasionally may be sudden and overwhelming in acute infectious polyneuritis. Patients afflicted with either condition complain of hyperesthesia, but in poliomyelitis this is really muscle pain present, when the muscles are activated and on deep pressure.[9] With infectious polyneuritis the patient, in addition to having muscle pain, has hyperesthesia on superficial touch.

Both diseases may involve nuchal rigidity and tenderness of the back muscles, although these are rare in cases of infectious polyneuritis. The progress of the paralysis is usually ascending in the two conditions, but they definitely differ in their types of involvement. According to Dechaume,[10] the important pathologic condition in infectious polyneuritis occurs in the peripheral nerves. The consequent paralysis is a direct effect of this underlying disorder. The paralysis is usually symmetrical and bilateral and involves the proximal muscles of the extremities more severely than the distal group. This was the situation in the first case, when the patient had an incomplete quadriplegia, partial control of the fingers still being present on admission. Involvement of the cranial nerves is limited mainly to the seventh nerve.

The major underlying disease in poliomyelitis is in the anterior horn cells. The paralysis due to this

9. Toomey, J. A.: Diagnosis of Poliomyelitis, J. A. M. A. **117**: 269 (July 26) 1941.
10. Dechaume, Jean: Rev. neurol. **1**: 403 (March) 1932.

underlying condition is segmental—that is, if a segment in the cord is involved the muscle groups supplied by these nerves will be paralyzed. The paralysis is not necessarily symmetrical and bilateral but is often unilateral and irregular in distribution. In addition, the cranial nerve involvement is multiple rather than limited to the seventh nerve.

There is an important differential as far as the progress of the two conditions is concerned. While exacerbations and new paralyses may develop as late as one to three months after the onset of infectious polyneuritis, it is unusual to have any new involvement after the second week of illness in poliomyelitis.

The all important spinal fluid changes confirm the diagnosis. In cases of infectious polyneuritis there is the already discussed albuminocytologic disassociation. It must be emphasized that the high value of the spinal fluid protein may not occur until two weeks after the onset. In cases of anterior poliomyelitis the spinal fluid picture is entirely different. Here there is a cellular

TABLE 3.—*Differential Diagnosis Between Acute Infectious Polyneuritis and Acute Anterior Poliomyelitis*

	Acute Infectious Polyneuritis	Acute Anterior Poliomyelitis
History	Usually slow progressive involvement but may be overwhelming in its suddenness of onset	Slow progressive onset
Pain	Hyperesthesia and muscle pain	Muscle pain
Involvement	1. Ascending paralysis 2. Bilateral, symmetrical involvement usually beginning in the proximal groups of the muscles of extremities 3. Cranial involvement—usually only 7th nerve	1. Ascending paralysis 2. Segmental, often unilateral, irregular muscle involvement 3. Cranial involvement; multiple cranial nerve involvement
Progress	New paralysis may develop for a prolonged period after onset	No further paralytic involvement two weeks after onset
Laboratory	Albuminocytologic dissociation in spinal fluid	Cellular increase in spinal fluid—early polymorphonuclear in character, followed by lymphocytes
Prognosis	Good	Guarded for a prolonged period

increase which very early is polymorphonuclear; a little later lymphocytes predominate. There may be a moderate increase in the value of the spinal fluid protein. This difference in the spinal fluid confirms the diagnosis.

Prognosis is a variable factor in poliomyelitis. At the onset one cannot foretell the amount of paralytic involvement, and after cessation of the active state and in the presence of paralysis one cannot forecast the amount of residual paralysis. In infectious polyneuritis the prognosis is usually good, and one can prognosticate as to the absence of all residual paralysis.

SUMMARY

It is more than an academic consideration to differentiate acute infectious polyneuritis from acute anterior poliomyelitis, especially during a poliomyelitis epidemic, since in the former the prognosis is good and in the latter it is guarded for a prolonged period.

One of the 2 cases of infectious polyneuritis presented is typical and the other is atypical.

5 East Eighty-Fourth Street.

THE ALLEGED EFFICIENCY OF MEDICINAL TREATMENT OF TYPHOID CARRIERS

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WITH THE TECHNICAL ASSISTANCE OF MISS GAIL REEVES
SAN FRANCISCO

Because typhoid carriers are denied occupations involving food handling and care of children, are kept under surveillance by health departments and fear the possible infection of others, their successful treatment is greatly to be desired. Successful treatment would also be important in the present war emergency so as to prevent and control spread of the infection in military establishments. To this end, two general procedures and agents have been proposed: (1) the removal of foci of typhoid micro-organisms, usually by cholecystectomy, and (2) the administration of drugs which might be bactericidal. Curative results have been claimed for both these procedures.

For instance, Bigelow and Anderson [1] in 1933 and Coller and Forsbeck [2] in 1937 are among those who have reported cures by removal of the gallbladder. This is, however, a major undertaking, which fails to cure the patient in a considerable number of instances. For this reason, others have sought a medicinal cure. Onodera and his co-workers [3] in 1931 suggested the use of soluble iodophthalein, and more recently Saphir and Howell [4] and Enright [5] have reported apparent cures from its use. That this drug might be effective in curing persons who harbored the bacteria in their gallbladders appeared rational, owing to its concentration in this organ. In 1941 Levi and Willen [6] reported the cure of a carrier by the use of sulfaguanidine.

We have tried both the soluble iodophthalein and the sulfonamides, and also a new antiseptic, namely phenothiazine and its derivatives, which are excreted in high concentration into the bile,[7] in 6 typhoid carriers and 1 dysentery carrier. These compounds and others were also tested in vitro for their effects on typhoid bacilli. Although all the results were negative, it is believed that the publication of this report is in order so that physicians and public health officials may not relax established controls of typhoid carriers by putting faith in, or wasting time and effort with, proposed medicinal cures.

Supported, in part, by the Rockefeller Fluid Research Fund of the Stanford University School of Medicine.

From the Departments of Pharmacology and of Medicine, Stanford University School of Medicine, and the San Francisco Department of Public Health.

Dr. J. C. Geiger, Director of the San Francisco Department of Public Health, directed patients to us and supplied soluble iodophthalein. Dr. Floyd DeEds of the U. S. Department of Agriculture at Stanford supplied phenothiazine. Dr. L. P. Gebhardt assisted in the study of the drugs on cultures. Dr. S. L. Christian of the U. S. Marine Hospital gave permission to include case 2. The Lederle Laboratories and E. R. Squibb & Sons supplied sulfadiazine and sulfaguanidine respectively.

1. Bigelow, G. H., and Anderson, G. W.: Cure of Typhoid Carriers, J. A. M. A. **101**: 348 (July 29) 1933.

2. Coller, F. A., and Forsbeck, F. C.: Surgical Treatment of Chronic Biliary Typhoid Carriers, Ann. Surg. **105**: 791 (May) 1937.

3. Onodera, N.; Murakawa, G., and Liu, S.: On a New Treatment for Typhoid Carriers, Deutsch. Arch. f. klin. Med. **171**: 503, 1931.

4. Saphir, William, and Howell, Katharine M.: Soluble Iodophthalein in the Treatment of Carriers of Typhoid-Paratyphoid Group, J. A. M. A. **114**: 1988 (May 18) 1940.

5. Enright, J. R.: Apparent Cure of a Typhoid Carrier with Soluble Iodophthalein, J. A. M. A. **116**: 220 (Jan. 18) 1941.

6. Levi, J. E., and Willen, Abner: Typhoid Carrier State Treated with Sulfaguanidine, J. A. M. A. **116**: 2258 (May 17) 1941.

7. DeEds, Floyd, and Thomas, J. O.: Studies on Phenothiazine: IX. The Biliary Excretion and Anthelmintic Action of Thionol, J. Parasitol. **27**: 143 (April) 1941.

EFFECTS ON TYPHOID CULTURES

Phenothiazine, phenothiazone, thionol, tetraiodophthalein, sulfanilamide, sulfathiazole, sulfadiazine and sulfaguanidine were added individually to sterile broth in test tubes to make concentrations of 100 mg. per hundred cubic centimeters (two to six tubes each). The tubes were then inoculated with constant amounts of a suspension of typhoid bacilli in physiologic solution of sodium chloride. Luxurious growth occurred in all the tubes, although this was least in the sulfadiazine tubes. Subcultures from the tubes containing phenothiazine and thionol into fresh tubes containing the same drugs again resulted in plentiful growth.

In an effort to quantitate any possible inhibition of bacillary growth, the drugs (to make 100 mg. per hundred cubic centimeters) were mixed with sterile melted agar and poured into Petri dishes. The surface was then inoculated with a highly diluted saline suspension of typhoid bacilli, but again growth was excellent in all plates, approximating that of the controls.

From this it was clear that none of these compounds, in the high concentrations tried, exhibited a direct inhibitory effect on the typhoid bacillus in vitro. Despite these negative results in vitro, trials were made with patients, because the fate of some of these agents in the body might be different and thereby their inhibitory action enhanced. Furthermore, clinical tests appeared desirable for the sake of completeness of tests and also to check the claims made for iodophthalein and sulfaguanidine.

CLINICAL TRIALS

Trials with certain of the drugs tested on cultures were made on patients, with uniformly disappointing results. In each case the micro-organisms were isolated from the stools and identified by biochemical and serologic procedures in two independent laboratories.[8] Individual cases are reported as follows:

Case 1.—A Chinese restaurant keeper aged 50, who was not known to have had typhoid and had no complaints referable to the carrier state, was discovered to be a carrier of the bacilli in a routine examination of food handlers. Before treatment he had one positive, three negative and then one positive stool culture, in that order. He was given phenothiazine 1 Gm. daily for one week, after which his stool still contained typhoid bacilli on two examinations. Then he was given sulfaguanidine 9 Gm. daily for one week, after which stool examinations were negative on five occasions, but on the sixth occasion, or eight months after treatment, the stool was again positive.

Case 2.—A German seaman aged 55 had typhoid fever at 52. Stool cultures had been consistently positive since then, and a typhoid osteomyelitis of a rib was present. He was given thionol 1.2 Gm. daily for nine days. Cultures of pus from a rib, and the urine and stools were all positive after this. Soluble iodophthalein was given in doses of 4 Gm. on alternate days for six days, then once weekly for one month. Three consecutive cultures made after this treatment still showed the presence of typhoid bacilli. Sulfaguanidine 12 Gm. daily was then given for one week, but two subsequent stool cultures remained positive.

Case 3.—An American housewife aged 55 did not know how she became a typhoid carrier but was discovered to be one when her brother, for whom she cooked, contracted the disease. Phenothiazine 1.2 Gm. daily was given for one week but failed to render her stool culture negative. Soluble iodophthalein 4 Gm. every other day for three doses, then once weekly for two weeks, was given. The nausea and diarrhea accompanying the medication were partially controlled with camphorated tincture of opium 8 cc. with each dose. Three further stool cultures were all positive. Sulfaguanidine 12 Gm. daily for eight days was given next but failed to remove the infection. Finally sulfadiazine 6 Gm. daily for five days and, after an interval of one week, 6 Gm. daily for another week and then 3 Gm. daily for a last week, also failed to affect the presence of typhoid bacilli in stool culture.

Case 4.—An American housewife aged 37 was found to be a typhoid carrier on routine examination, although the stool cultures were irregularly positive. She was given phenothiazine 1.2 Gm. daily for one week without effect on the infection. Following this, soluble iodophthalein 4 Gm. every other day for one week, then once weekly for two weeks, was given. Two weeks later the stool was negative but after another week showed a nearly pure culture of Eberthella typhosa. Sulfaguanidine was then given, 12 Gm. daily for eight days, without affecting the stool culture, and finally sulfadiazine 3 to 6 Gm. daily was administered for two weeks. Two subsequent stool examinations were positive for typhoid bacilli.

Case 5.—A Spanish-American housewife aged 26 had typhoid fever six years before coming under observation as a carrier. Her gallbladder was removed, but her stools continued to be positive for typhoid bacilli. Phenothiazine 1.2 Gm. daily was given for one week. Then, because bacilli were still present, soluble iodophthalein was given, 4 Gm. every other day for one week and then weekly for two weeks. Since this drug also failed to cure her, she was given sulfaguanidine 12 Gm. daily for eight days. Following this, four stool cultures, taken over a period of six weeks, were negative for typhoid bacilli. The next culture, seven weeks after treatment, showed E. typhosa in small numbers, but, unfortunately, the biochemical identification was not confirmed serologically. The next four cultures, made eight, nine, ten and eleven weeks after treatment, were negative. Thus, although the single positive culture after the treatment with sulfaguanidine had not been confirmed, it was necessary to consider her not yet cured.

Case 6.—An elderly American housewife had typhoid fever in May 1941. In August her stools still contained typhoid bacilli, and she was given a course of sulfaguanidine 12 Gm. daily for seven days. Despite this treatment she remained a carrier. Later she was given 12 Gm. of sulfaguanidine and 6 Gm. of sulfadiazine daily for eight days but was not cured.

Case 7.—A white hospital messenger in his fifties was found to be a carrier of Shigella paradysenteriae alkalescens on routine examination. He received in the following order (1) a course of autogenous bacteriophage, (2) phenothiazine 1.2 Gm. daily for ten days, (3) soluble iodophthalein 4 Gm. every other day for one week and then weekly for three weeks, and (4) sulfaguanidine 24 Gm. daily for four days as well as a longer course with a smaller dose of the drug on another occasion. Stool cultures were positive for the bacilli throughout this extensive, and rather intensive, treatment, though quantitatively somewhat less during sulfaguanidine therapy.

To summarize the medication, 6 typhoid carriers and 1 dysentery carrier were treated. Thionol was given to 1, phenothiazine to 5, soluble iodophthalein to 5, sulfaguanidine to 7 and sulfadiazine to 2.

COMMENT

Although it is disappointing that none of the drugs tried cured the 6 typhoid carriers treated, it is possible that others may do so. The temporary, though imperfect and at best only suggestive, beneficial effect of sulfaguanidine on 2 patients would suggest that this type of compound might be worthy of further chemotherapeutic development. The succinyl sulfathiazole introduced recently by Poth and Knotts [9] as an intestinal antiseptic was not at our disposal.

It is obvious that long-time "cures" are necessary before a patient can be dismissed. Thus patient 1, who appeared cured six months after treatment, was in fact still a carrier, as demonstrated later. When patient 5 had negative cultures for typhoid, it was thought that sulfaguanidine would be useful for patients who

8. Independent checks were made by the laboratories of the San Francisco Department of Public Health and the clinical bacteriologic laboratory of the Stanford Department of Medicine.

9. Poth, E. J., and Knotts, F. L.: Succinyl Sulfathiazole, a New Bacteriostatic Agent Locally Active in the Gastrointestinal Tract, Proc. Soc. Exper. Biol. & Med. **48**: 129, 1941.

remained carriers after cholecystectomy. Her later relapse did not support this idea.

Several of the patients were more likely to have stools positive for typhoid bacilli when catharsis with magnesium sulfate was used to obtain the specimen. This procedure should be followed if ordinary specimens are not consistently positive. It is interesting that only 3 of the 6 typhoid carriers had had demonstrable typhoid in the past and that only 1 case of typhoid fever was known to have been contracted from these carriers. It should also be noted that 1 patient whose gallbladder was removed was not cured of the typhoid carrier state.

The failure in the dysentery carrier is one of the two failures in the series of Rantz and Kirby.[10] This case is included here also because of its resistance to the other agents as well; and the failure is not to be construed as representing the usual effect of sulfaguanidine in dysentery carriers, which is quite satisfactory.

CONCLUSIONS

1. Six typhoid carriers and 1 dysentery carrier were not cured by treatment with thionol, phenothiazine, soluble iodophthalein, sulfaguanidine or sulfadiazine.

2. The clinical claims of others for iodophthalein and sulfaguanidine were not confirmed.

3. These results agreed with direct negative results with these and some other agents on cultures of typhoid bacilli.

4. As yet there is no dependable or efficient curative drug for typhoid carriers, although further chemotherapeutic development might be attempted with the sulfaguanidine type of compound, but it must be definitely more promising.

5. The established methods for the control of typhoid carriers should not be relaxed by physicians and public health officials in lieu of medicinal treatment.

Clinical Notes, Suggestions and New Instruments

DERMATITIS MEDICAMENTOSA ATTRIBUTED TO CARTER'S LITTLE LIVER PILLS

JOHN A. CONROY, M.D., NEWTON, MASS.

There are many so-called patent medicines advertised and marketed in the United States. The new Federal Food, Drug and Cosmetic Act requires that the ingredients of these products be listed on the package. Carter's Little Liver Pills is a nationally advertised product. It is stated on the package marketed that the pills contain podophyllum resin and Curaçao Aloe. The amount of each drug in each pill or in the entire package is not stated.

O'Donovan[1] stated that podophyllum resin, known as podophyllin, is extracted from the root of Podophyllum peltatum L. by percolation with 90 per cent alcohol, precipitation of the resulting tincture in water acidiuated with hydrochloric acid, washing and drying. It is a pale yellow to deep orange-brown amorphous powder, soluble in 90 per cent alcohol and in ammonia and partly soluble in ether. The resin yields a percentage of a crystalline substance known as podophyllotoxin $C_{22}H_{22}O_8$, the remaining amorphous portion being known as podophyllo resin; both substances are purgative.

Podophyllum peltatum L., according to O'Donovan, is a perennial herb commonly found wild in the United States and in some parts of India. It bears a large solitary white flower rising from between two leaves. The yellowish, pulpy fruit is known variously as May apple, hog apple, raccoon berry, wild lemon and mandrake. Its medicinal use is that of a powerful purgative, and it is sometimes called "vegetable mercury."

The literature reveals no reports of the ingestion of this drug causing dermatitis medicamentosa, but O'Donovan reported several cases and quoted cases reported by Winterburn, Hutchinson and Webster in which dermatitis was caused by contact with podophyllum resin.

Curaçao aloe, as the name suggests, originates in the Netherland West Indies. Aloe is a genus of plants of the family Liliaceae. There are many species. The American century plant is one of them. There are also a Barbados, a British and another American species. Aloe vera is official in the British pharmacopeia. The drug is the inspissated juice from the leaves of Aloe vera. Aloe chinensis and Aloe perryi were at one time official in the United States Pharmacopeia but are no longer so. As far as can be ascertained, Curaçao aloe has never been official in either the British or the United States Pharmacopeia.

Aloe contains a crystalline substance, aloin, a resin and a trace of a volatile oil. Aloin is a mixture of anthracene bodies similar to those contained in cascara sagrada, rhubarb and senna. It is less efficient than the crude drug and more irritant. Aloe is a slow acting but efficacious cathartic.

Hamilton[2] reported a case of acute vesicular dermatitis caused by the ingestion of Curaçao aloe by a woman aged 49. He stated that the patient's eyelids were swollen and the face, arms, legs, groins and the grooves under the breasts were thickly covered by minute vesicles such as are seen in herpes. Over the front of the chest and over the dorsum of the feet these vesicles had become confluent and the surface epithelium lost; acute eczema resulted, and recovery was slow.

In the following case the cutaneous lesions and the progress of the patient are similar to those reported by Hamilton. The case is reported because the product involved is widely distributed and because in possible similar cases the condition may not have been recognized or may have been recognized but not reported.

REPORT OF CASE

H. C. S., a man aged 50, had on Nov. 20, 1941 a large erythematous vesicular lesion on the medial aspect of the right ankle. The lesion resembled an irregular circle and was about 3.5 cm. in its widest diameter.

The patient was first seen on November 28, when he had a generalized erythematous, small vesicular rash which covered the body in large irregular patches. It was particularly noticeable on the lateral aspects of the thighs, the legs and the upper extremities. The entire back, chest and abdomen and the buttocks were covered with small vesicular herpetic lesions.

The chief complaint was intense itching. The temperature and the pulse rate were normal. The heart and lungs were normal. The blood pressure was 140 systolic and 90 diastolic. Urinalysis and the Kahn test gave negative results.

The onset of the generalized dermatitis was sudden, after the initial lesion on the ankle had been present about one week.

The patient's past history was gone over thoroughly with regard to diet and recent medication. The only thing of interest elicited was that about ten days before the appearance of the initial lesion he had taken approximately eight pills of a preparation called Carter's Little Liver Pills. He had never taken this preparation or any other laxative previously. He was not in the habit of taking any "patent medicines." Before the appearance of the rash he had been in excellent health and had had no need to consult a physician for some time. He was not subject to and never previously had had hay fever, asthma, eczema in any form, allergy or cutaneous disease. He had never been on a restricted diet and could not name any type of food which he could say disagreed with him. He was away from home on a business trip at the time he took the pills mentioned. He was not constipated or sluggish when he took them. He said that he had a feeling that he should take something, for no particular reason; so he took about eight of the pills during about three days. He had not used any new type of soap, cream, talc or bath salts.

10. Rantz, L. A., and Kirby, W. M. M.: The Use of Sulfaguanidine in the Treatment of Dysentery Carriers, J. A. M. A. 118:1268 (April 11) 1942.

1. O'Donovan, W. J.: Brit. J. Dermat. 47:13 (Jan.) 1935.

2. Hamilton, Ian: M. J. Australia 1:302 (Feb. 27) 1932.

The rash finally extended all over the body and was composed entirely of minute vesicles. The itching was troublesome. There was edema of the face, of the area about the eyes and of both legs, ankles and feet. The vesicles burst, the skin became moist and crusted and acute eczema resulted.

The disorder progressed slowly, and almost every part of the body was involved. The face, ears, neck, abdomen, chest, back and buttocks slowly cleared, in approximately that order, leaving dry, scaly, slightly pinkish, crescent shaped, macular lesions with a totally clear center. These lesions were more noticeable on the flat surfaces.

The lower dorsal part of the forearms, wrists, hands and fingers after seven weeks presented an acute eczematous condition with much weeping and crusting. The same condition, in addition to considerable edema, was present in both the legs and the ankles. Progress and recovery have been slow.

183 Tremont Street.

Council on Foods and Nutrition

THE COUNCIL ON FOODS AND NUTRITION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

FRANKLIN C. BING, Secretary.

FOODEX INELIGIBLE FOR ACCEPTED FOODS

The Scientific Nutrition Corporation of Bloomfield, N. J., has been actively circularizing physicians and others in an attempt to promote the sale of a so-called vitamin and mineral supplement, Foodex. Many physicians have written to the Council office to inquire about the nature of the product and its possible usefulness. One woman wrote from White Plains, N. Y., "Will you kindly advise me as to the value of Foodex as an addition to the daily diet. Is it worth $3.50 for seventeen days' supply or are there other preparations just as good which are considerably cheaper?"

From the advertising material distributed by the firm it appears that Foodex is available in three dosage forms designated as "Children-Juniors," "Adults" and "Adults-Seniors," the latter being a preparation recommended for use after the age of 45. The "Adults-Senior" product seems to be a little richer in vitamin content than the other dosage forms. Each vitamin cake and each mineral cake together, of this product, are said to provide:

Vitamin A	10,000 Int. Units
Vitamin B_1	600 Int. Units
Vitamin B_2 (G)	2,250 micrograms Riboflavin
Vitamin B_6	200 micrograms Pyridoxin
Vitamin C	750 Int. Units
Vitamin D	1,000 Int. Units
Vitamin E	16.66 mgs. Natural Mixed Tocopherols (60% Alpha Tocopherol)
Nicotinamide	10 mgs.
Calcium	1.0 gram
Phosphorus	0.8 gram
Iron	15.0 mgs.
Copper	1.5 mgs.
Manganese	1.0 mg.
Magnesium	1.0 mg.
Iodine	0.15 mg.
Zinc	1.0 mg.

PLUS—The Entire Natural B Complex Factors and Trace Minerals as Found in 1 gram Yeast Concentrate, 1 gm. Wheat Germ Powder, 400 mgs. Rice Polish Powder, and 13 gms. Dry Defatted Milk Powder.

Of the foregoing list it may be pointed out that the significance of vitamin B_6 or vitamin E in human nutrition has not been established. The need for manganese, magnesium or zinc in amounts beyond those that may be provided in any ordinary human diet has not been shown. If the two "cakes" supply, in the amounts claimed, all of the other substances, namely vitamins A, B_1, G, C and D and the minerals calcium, phosphorus, iron and iodine, they are capable of supplying significant quantities of these dietary essentials. But the Council is aware of no evidence that Foodex will retain all of its vitamin potencies under the usual conditions of storage and use; indeed, there is much evidence that vitamins A and C in products such as Foodex purports to be are especially unstable and are destroyed to a large extent during storage. Further, it is emphasized by all recognized authorities in nutrition that healthy persons can and should receive their dietary essentials by eating an adequate diet, not by consumption of products such as Foodex.

The promotional armamentarium of the firm includes an elaborate brochure entitled "Man a Nutritive Process" and three "Manuals for the Profession" bearing the imposing titles "'Geriatrics' The New Science of Keeping Fit after 45," "A New Scientific Individualized Reducing Technique" and "A Dietetic Diagnostic Technique." These booklets consist of a mixture of truths and half truths cleverly blended to make it appear to be extraordinarily difficult to obtain the necessary nutrients from ordinary foods, unless the diet is supplemented with Foodex. Scarcely a single trick long known to "patent medicine" promoters has been overlooked in compounding this advertising material.

CONSIDERATION OF THE BROCHURE "MAN A NUTRITIVE PROCESS"

Examination of the booklet "Man a Nutritive Process" is an interesting adventure for those who like their historical and scientific subjects presented without strict regard to truth. The first three pages of this brochure consist of a brief inaccurate account of the modern knowledge of nutrition. While research workers in numerous laboratories even now strive to determine the biochemical functions of the various vitamins and minerals that are essential in the diet, the anonymous author of this brochure glibly dismisses the interrelationship between vitamins and minerals in the following manner: "One of the principal functions of vitamin D is its influence on calcium and phosphorus absorption. Vitamin A increases the utilization of iron. Manganese is needed to assist the action of vitamin B_1. There also is an interrelationship between manganese and vitamin C. Calcium deficiencies are accompanied by inability to utilize vitamin B_1. Vitamin E appears to be correlated with better utilization of iron, etc., etc." Although there may be a vestige of truth in the statement regarding vitamin D, none of the other quoted statements can be substantiated.

Three pages of this brochure are devoted to a comparison between the methods of preparation and preservation of foods used in "Grandfather's Age" and the "Present Age." These statements are intended to show why grandfather got an abundant supply of dietary essentials by eating honest-to-God food and why people today do not get enough of them, unless they eat Foodex. Much unwarranted emphasis is placed on nutritional deficiency in man as a result of depletion of soil, loss of vitamins as a result of storage of foodstuffs, long distance transportation, pasteurization, commercial canning of fruits and vegetables, quick freezing and cooking of food products. Of course, the firm has not fully taken into consideration that the modern processing methods enable us to obtain safe and wholesome foods throughout the year. An amusing comparison concerns meats. In grandfather's day, so it is said, "The local butcher was an important person. He supplied fresh-killed meat which was consumed immediately." In the present age, so the account reads, ". . . . our meats are canned, pickled, smoked, sausaged, and corned. They are refrigerated and cold storaged, and as they finally reach our dinner table cooked, their vitamin content is greatly diminished." There is practically no loss of the vitamins in meat as a result of refrigeration and, unless grandpa ate his meat raw, he didn't get any more of the heat labile vitamins from meat than do his grandchildren.

There are a number of pages devoted to abstracts of original papers, no doubt without permission of the authors and presented in such a way as to make it appear impossible to obtain an adequate diet without the use of vitamin-mineral supplements. In addition to quotations from published articles of leaders in nutrition, these quotations being removed from their context and thus being capable of producing an effect entirely different from that intended by the authors, there are included abstracts of articles written by newspaper columnists and other rewrite men. Thus U. S. Senator Fletcher is quoted as having said that 99 per cent of the American people are deficient in essential minerals due to depleted soils and vegetation, and David Dietz is reported to have announced that medical men are just

finding out that among the principal causes of night automobile accidents is vitamin A deficiency. The reports by senators and newspaper men might be impressive to the layman who is in no position to judge the scientific qualifications of the persons making the statements, but authorities on nutrition do not believe that there is sufficient evidence at the present time to warrant either of these statements.

The firm is not at all reticent about discussing the "Physiological Effects Arising from Vitamin and Mineral Deficiencies" and "The Functions of Vitamins and Minerals." In the presentations offered, no attempts have been made to differentiate between the signs of deficiency diseases observed in experimental animals and those observed in man. Descriptions of manganese, magnesium and zinc deficiency are written in such a way that one readily gains the impression that these discussions apply to the human being, for whom no deficiency diseases due to lack of these three elements have been reported.

It must be irritating for informed physicians to read assertions such as the following: "There are two methods of obtaining vitamins and minerals. (1) By changing your eating habits to include daily large amounts of protective foods (milk, dairy products, eggs, vegetables, fruits, whole-wheat and dark grains)," —well enough, but look what follows—"all carefully selected and thoroughly checked as to their vitamin content, properly prepared and scientifically cooked under controlled temperatures, as will be indicated below." And "below" the firm has the effrontery to list sixty-four practical suggestions for the preservation of vitamin and mineral values in selecting, preparing and cooking foods. Here is an exemple of one of the sixty-four statements: "Buy fruits and vegetables from markets that receive them fresh daily. Inquire the source of growth, whether storaged, or freshly picked. The destruction of vitamin C starts as soon as vegetables are gathered and gradually continues." After establishing all of these obstacles to its own satisfaction, the firm points out the second way to obtain adequate vitamins and minerals. (This is by the regular consumption of Foodex, of course.)

It is not generally well known how misleading comparative statements regarding foods may be, even when the statements are true. The Council has long held the view that the effect produced by advertising statements is just as important as the actual statements themselves. The Scientific Nutrition Corporation compares the nutritive value of Foodex with a number of natural foods. These foods are listed and illustrated under the caption "Amounts and Kinds of Foods one would have to consume to receive the Vitamins and Minerals contained in a daily supply (one vitamin cake and one mineral cake) of FOODEX (type Adults-Seniors)." It is claimed, for example, that one would have to eat 1¼ pounds of butter, 3 pounds of wheat, 4 pounds of cream cheese, 3½ pounds of apples, 12½ pounds of oysters, 1 quart of milk, ¾ pound of graham crackers, 1 pound of raisins, six medium bananas, 6 tablespoons of lima beans, 3 cups of cabbage and 30 grs. (grams ?) of cod liver oil in order to obtain one's daily supply of vitamin A, B_1, B_2 (G), C, D, calcium, phosphorus, iron, copper, manganese, magnesium and iodine respectively. Even if Foodex contains as much of these dietary essentials as the quantities of foods with which Foodex is being compared, it obviously would not be necessary to eat these quantities in order to obtain an adequate diet, because each of the foods mentioned contributes also a portion of the other essential nutrients. For example, cod liver oil supplies vitamins A and D, yet the firm compares Foodex only with the iodine content of cod liver oil. The only way to make comparisons properly is to point out dissimilarities as well as resemblances.

OTHER PROMOTIONAL LITERATURE

The other advertising material used by the firm contains much of the same sort of material found in "Man a Nutritive Process." In the booklet entitled "Geriatrics' the New Science of Keeping Fit after 45" the headings of much of the material has been reworded so as to give the impression that the quotations cited refer to old age. As an example, here is the heading "Phosphorus Important to People After 45 Because It Aids the Work of Glands." The following statement appears under this heading: "The American diet is more likely to be faulty in calcium than in any other mineral element. Phosphorus also contributes to bony structure and forms an integral part of every cell multiplication and is found in organic union with proteins, fats and carbohydrates. It aids in the work of various glands." Contrary to implication, these statements are not direct quotations from Dr. McLester's "Nutrition and Diet in Health and Disease" but they are phrases and clauses taken from the original text and compiled into new sentences. It is thus made to appear that phosphorus deficiencies are as prevalent in the American diet as calcium deficiencies, which of course is false, and no assertion to that effect can be found in the original text nor was intended by its author.

As might be expected, the booklet "A New Scientific Individualized Reducing Technique" calls attention to the ease of obtaining an adequate diet when Foodex is consumed. There is a so-called "Vitadiet Plan," which means the use of Foodex in diets for reducing purposes.

There is a copy of a "Dietetic Questionnaire" in the booklet entitled "A Dietetic Diagnostic Technique." This questionnaire apparently is to be used in determining the adequacy of a patient's diet. It would appear, however, that the procedure is included only to stress the ease with which Foodex solves all the problems. Detailed discussion of this advertising is unnecessary.

CONCLUSION

Foodex, a preparation of the Scientific Nutrition Corporation, Bloomfield, N. J., is a product which is promoted with exaggerated and misleading claims. The composition and advertising are in conflict with the rules and policies of the Council.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Acting Secretary.

LIVER AND STOMACH PREPARATIONS (See New and Nonofficial Remedies, 1941, p. 335).

PURIFIED SOLUTION OF LIVER-LAKESIDE.—A sterile aqueous solution of liver preserved with 0.5 per cent of phenol. The daily parenteral administration of 0.1 cc. has been found to produce the standard reticulocyte response defined as 1 U. S. P. unit (injectable) when assayed in cases of pernicious anemia as required by the Council.

Actions and Uses.—Purified solution of liver-Lakeside is used for intramuscular injection in the treatment of pernicious anemia. See the general article Liver and Stomach Preparations, New and Nonofficial Remedies, 1941, page 328.

Dosage.—The amount to be administered will depend on the condition of the patient. When the erythrocyte count is below 1,000,000 per cubic millimeter, injection of 10 U. S. P. units daily or on alternate days is recommended. The physician will be guided by the change in blood picture. Injection of 10 U. S. P. units weekly or every ten days will generally maintain the patient.

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Ampule Purified Solution of Liver, 10 U. S. P. Injectable Units per cc.: 1 cc.

Purified Solution of Liver, 10 U. S. P. Injectable Units per cc.: 10 cc. vial.

Purified Solution of Liver, 2 U. S. P. Injectable Units per cc.: 60 cc. vial.

Preparation.—Purified solution of liver-Lakeside, 10 units per cubic centimeter, is prepared as follows: Fresh edible liver is extracted with water at 170 F. for thirty minutes and filtered. The filtrate is concentrated in vacuo and extracted with 70 per cent alcohol; the alcoholic extracts are concentrated in vacuo and precipitated with ammonium sulfate. The precipitate is further purified by alcoholic fractionation, the alcohol removed and the extract made up to volume so that each cubic centimeter contains the extract from 100 Gm. of fresh liver. Five-tenths per cent phenol is used as a preservative. The 2 U. S. P. unit preparation is prepared by diluting the 10 unit product with the appropriate amount of water.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 25, 1942

ENROLMENT FORM AND QUESTIONNAIRE FOR PROCUREMENT AND ASSIGNMENT SERVICE

This week to every physician licensed to practice in the United States there is mailed the long awaited enrolment form and questionnaire of the Procurement and Assignment Service. It comes jointly from the National Roster of Scientific and Specialized Personnel and the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. Each of these agencies is, in turn, related to others and ultimately to the Executive Office of the President. Every physician who receives the medical enrolment form should fill it out as completely as possible and return it immediately in the franked envelop which accompanies it. Opportunity is given to indicate first, second, third and fourth choices of assignment, and it is hoped that the complete functioning of this service will be such that Army, Navy, public health, civilian and industrial needs may be met.

As we go to press the Army requires five thousand physicians, in excess of those already enrolled, to meet existing needs. Therefore, every physician ready now for service who knows that he is not filling an essential position may apply at once to the office of the corps area commander in his area, to the Office of the Air Surgeon, Army Air Force, Washington, D. C., or directly to the Office of the Surgeon General in Washington so that he may receive at once an application blank and proceed to have a physical examination. The Procurement and Assignment Service headquarters in Washington, aided by the consulting office in the American Medical Association and the individual corps areas and state offices, will continue to clear the names of physicians who apply.

This week in Washington a meeting has been called of state representatives of the Procurement and Assignment Service east of the Mississippi River only together with officers of the Army and Navy medical departments, the corps area officers and the board of the Procurement and Assignment Service to work out plans which will aid recruitment in the individual states. Such plans will, of course, be announced just as soon as they have been suitably drawn and made available. The chairmen for veterinary medicine and dentistry have not been called because there exists no shortage in the supply of these professions for the armed forces. Chairmen of states west of the Mississippi River will meet at a later date at some city west of the Mississippi River.

The physicians of this country have invariably responded to the needs of the armed forces whenever they have been called upon. The Selective Service System makes every man in the United States under 45 years of age available on call. Complete cooperation through use of the enrolment form and through direct application by those ready to volunteer immediately will meet the various demands on medical services without making necessary any call on the Selective Service System for the provision of necessary physicians to the armed forces.

STATUS OF GASTRODUODENAL ULCER

An editorial in the May 4, 1935 issue of THE JOURNAL pointed out some of the inadequacies of the circulatory, the infectious and the mechanical functional theories of the genesis of gastroduodenal ulceration; it concluded that "the accumulated clinical and experimental observations force the clinician and the experimental worker once more to look to the digestive part of the gastric secretion as the most important factor in the genesis of the ulcer." A symposium by physiologists, internists and surgeons in a recent issue of the *Archives of Surgery* reemphasizes the importance of the acid gastric secretion in the causation of gastroduodenal ulcer. Schiffrin and Ivy [1] state that destruction of gastric tissue results from the proteolytic action of the gastric juices. They do not wish to imply that the excessive secretion of gastric juice or its retention in the stomach is the cause of gastroduodenal ulcer. They believe, however, that the irritating action of acid and pepsin is the prime factor in the genesis of postoperative jejunal ulcer and is important in the development and perforation of duodenal ulcer.

According to Quigley,[2] hunger contractions through mechanical trauma to the area involved may give rise to distress to the patient with ulcer and may prevent healing. It is desirable to avoid the conditions which tend to exaggerate hunger contraction.

1. Schiffrin, M. J., and Ivy, A. C.: Physiology of Gastric Secretion, Particularly as Related to the Ulcer Problem, Arch. Surg. 44: 399 (March) 1942.

2. Quigley, J. P.: Motor Physiology of the Stomach, the Pylorus and the Duodenum, with Special Reference to Gastroduodenal Ulcer, Arch. Surg. 44: 414 (March) 1942.

According to Dragstedt,[3] pure gastric juice has the capacity of destroying all living tissue, including the wall of the stomach itself. Animal experiments utilizing a Pavlov or Heidenhain pouch have demonstrated that pure gastric juice has an aggressive action on living tissue as contrasted with the gastric content, which usually consists of a mixture of swallowed food and saliva, gastric juices from the parietal cells of the fundus, mucus and a neutral or faintly alkaline secretion from the pyloric antrum and varying quantities of regurgitated duodenal juices. This gastric content is relatively inert. In all the experiments in which pure gastric juice from an isolated pouch of the stomach is permitted to flow into the lower intestine, the ulcer forms in the intestine rather than in the gastric mucosa. Since the exposure is similar, one must conclude that the gastric mucosa has the greater resistance to digestion. Under normal conditions the gastric wall is not digested away because it is not exposed to pure gastric juice. A continuous gastric secretion occurs which is not dependent on the presence of food. It is slight and its small volume permits its neutralization by the mucus of the pyloric antrum, swallowed saliva and possibly also regurgitated duodenal contents. It is conceivable, Dragstedt points out, that this neutralizing mechanism may fail or prove inadequate and that, as a result, more or less pure gastric juice may accumulate in a stomach empty of food. It seems probable that some abnormality of this type is responsible for most cases of ulcer in man. Anderson and Fogelson reported a relative decrease in the gastric mucin in some patients with duodenal ulcer. Artificially induced continued excessive secretion of gastric juices by implanting histamine pellets in wax produced ulcers in all the common laboratory animals. Dragstedt advances the opinion that in man a similar excessive secretion of gastric juice occurs and an ulcer begins. The hypersecretion in most cases is probably neurogenic and is abnormal in the sense that it operates when the stomach is empty and in the absence of usual stimuli for gastric secretion.

The problem of ulcer in man, according to Palmer,[4] is one of tissue resistance versus acid attack. Vanzant and her collaborators have found that there was an increase of about 12 units of free acidity in the case of duodenal ulcer. In the case of gastric ulcer the mean free acidity was lower than normal by about 6 units. The incidence of achlorhydria was half that observed in normal persons. Peptic ulcer occurs in persons with a low secretory rate as well as in those with a high secretory rate. Chronic ulcer does not occur in persons with a complete and continuous achlorhydria. Nocturnal secretion, however, exceeds in amount and acidity that observed in normal persons. The presence of acid gastric juice is essential for the production of erosions and ulcers. Pepsin greatly facilitates the progress, but it alone will not destroy the mucosa. The chief protection against the acid attack on the cells of the mucosa seems to be provided by the thin layer of mucus with which they are covered. Thrombosis, embolism and infection are not essential features of experimental ulcer. Palmer calls attention to the fact that ulcers may, and the majority do, heal in spite of the presence of acid gastric juice. This is evidenced by the spontaneous remissions and by the healed lesions encountered in routine necropsies.

There appears to be considerable agreement between internists and surgeons as to the treatment of duodenal ulceration. The wave of enthusiasm for stomach resections which began a quarter of a century ago and was advocated with particular fervor in Germany has now considerably subsided. Thus, Allen[5] states that duodenal ulcer is primarily a medical problem and that apparently 80 per cent of the patients with this lesion respond to conservative measures. This is essentially what Sippy has taught for a number of years: that the surgical indications for duodenal ulcer were complications, namely acute perforation, massive hemorrhage, cicatricial obstruction and intractability. Allen believes, as do practically all surgeons today, that surgical cure for duodenal ulcer can be brought about only by a subtotal gastric resection. The operative mortality from this procedure has been reduced to a level compatible with the results obtained. Wangensteen[6] emphasizes that the most important criterion of an acceptable operation is that it reduces gastric acidity effectually. He feels that the three-quarter resection meets these demands. The only known manner in which the secretion of acid may be diminished effectually is by sacrificing a liberal portion of the gastric mucosa. Excision of antral mucosa is mandatory to insure achlorhydria. The antral mucosa probably contains a hormonal stimulant of gastric secretion other than histamine.

The case of gastric ulcer differs from that of duodenal ulcer principally because of the ever existing danger of malignant degeneration. Walters[7] finds that in 10 per cent of the cases gastric ulcer is malignant. He emphasizes that in many cases of chronic gastric ulcer healing is temporary under nonsurgical methods of treatment and recurrence is frequent. The triad which in the past was depended on to insure that the lesion is benign, namely relief of symptoms, disappearance

3. Dragstedt, Lester R.: Pathogenesis of Gastroduodenal Ulcer, Arch. Surg. 44: 438 (March) 1942.
4. Palmer, Walter Lincoln: Peptic Ulcer and Gastric Secretion, Arch. Surg. 44: 452 (March) 1942.
5. Allen, Arthur W.: Surgical Treatment of Duodenal Ulcer, Arch. Surg. 44: 501 (March) 1942.
6. Wangensteen, Owen H., and Lannin, Bernard: Importance of the Acid Factor, Arch. Surg. 44: 489 (March) 1942.
7. Walters, Waltman: Gastric Ulcer, Benign or Malignant, Arch. Surg. 44: 520 (March) 1942.

of the niche in the roentgenogram and the disappearance of blood from the stools, cannot be absolutely relied on. Schindler and Arndal stress that it is in the differentiation [8] of benign and malignant ulcer that gastroscopy is most useful and is here superior to roentgenoscopy. They admit, however, that the method had failed to make a correct differential diagnosis in 6 of 113 gastric ulcers. According to Eusterman, gastric carcinoma not only may masquerade successfully as benign ulcer but may react to treatment in similar fashion. Sarah Jordan summarized this problem by stating "Neither the size of the ulcer nor the age of the patient nor the presence of normal acid or hyperchlorhydria should lessen our suspicion of carcinoma, for some of our largest lesions have been benign and some of the smallest malignant. Malignant lesions occur often enough in the young, and benign ulcers often enough in the middle aged and old, and acid is present often enough where the lesion is malignant, so that these three criteria of size of ulcer, age of patient and presence or absence of acid have no actual or practical value in the diagnosis of the individual patient." Proper surgical treatment of gastric ulcer, according to Walters, has been followed by excellent results. In his experience, recurrence has not taken place when one-half the stomach was removed. The operative risk should not exceed 5 per cent and in the hands of skilled surgeons should be less than that.

AFFILIATED UNITS IN THE ARMY MEDICAL DEPARTMENT

Over two years ago the Surgeon General of the Army was granted authority to form certain general, evacuation and surgical hospitals as sponsored units of medical schools or large civilian hospitals. These were called "affiliated units" and were given numbers which, in many instances, corresponded to numbers of similar organizations sponsored during the first world war.

Specific tables of organization were drawn up for these hospitals, and the sponsoring institution was directed to fill the positions from among individuals connected with the institution. Physicians who were recommended were given "affiliated" commissions in the grades set up in the table for the positions they were to occupy. These officers are for duty only with the organization in which they are commissioned. Many have requested active duty prior to the calling out of the unit, and this has been granted, with the understanding that they will be returned to their units as soon as these units are activated.

Some misunderstanding has occurred among reserve officers as to the reason for commissioning these affiliated officers in higher grades than they themselves hold in the reserve corps. Information from the Office of the Surgeon General indicates that the "affiliated" officer is commissioned to perform a specific duty in his unit, the grade is fixed, and he will remain with the unit. He can be promoted only in the unit if a vacancy occurs in a higher grade and he can qualify for the position.

8. Schindler, Rudolf, and Arndal, O.: Gastroscopic Differential Diagnosis of Benign and Malignant Ulcer of the Stomach, Arch. Surg. 44:473 (March) 1942.

Current Comment

JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY

The first number of a new periodical entitled the *Journal of Neuropathology and Experimental Neurology* has just appeared under the editorship of Dr. George B. Hassin, with whom are associated a number of workers in this special field. The first number contains eleven original contributions in the field concerned and also a condensation of the transactions of the annual meeting of the American Association of Neuropathologists, which was held in Atlantic City during June 1941. A survey of the material here included indicates the great advancement that has taken place in this field in recent years. The appearance of a new, well edited, highly scientific publication of this character at this time is an indication of the progressiveness and vitality of American medical science.

NEW OBSERVATIONS IN POLIOMYELITIS

Elsewhere in this issue of THE JOURNAL appear a number of reports covering recent observations in poliomyelitis. The advances that have been made give assurance of greater preparedness on the part of the medical profession in meeting any outbreaks of the disease that may arise in 1942. The paper by Pohl of Minneapolis describes the first 26 cases treated directly under the advice of Miss Kenny. Emphasis on spasm of the muscle as a condition to be promptly controlled is a prominent feature of this discussion. The author is convinced that the method should be immediately adopted as the fundamental treatment of the disease. Already the results in 28 cases treated subsequently promise even more remarkable recovery. From the Willard Parker Hospital in New York comes a statement by Daly, Greenbaum, Reilly, Weiss and Stimson concerning 71 patients. Their conclusions, while most conservative, again emphasize the importance of spasm in muscle. These observers also stress the increased comfort of patients treated with this technic. They offer furthermore a better understanding of the significance of what Miss Kenny calls "mental alienation." The New York observers confirm the results reported from Minnesota to the effect that patients who receive the Kenny treatment are better off in comfort, freedom from atrophy and deformity, rapidity of recovery and possibly in extent of recovery. Step by step the battle against poliomyelitis is being won. The information that has been gained on the nature of the virus and methods of its transfer has been notably extended during the past year. The contributions of physiologists, neurosurgeons and physical therapists help to overcome the ravages of the disease.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

QUININE CONSERVATION ORDER

The fulfilment of requirements for the defense of the United States has created a shortage in the supply of quinine. In an effort to relieve this situation, the Director of Industry Operations of the War Production Board has issued an order (Conservation Order M-131) which provides that after its effective date, April 4, no person may sell, transfer or deliver, or purchase or accept any transfer or delivery of, any quinine except for use as (1) an antimalarial agent or (2) an ingredient of quinine and urea hydrochloride (U. S. P.) for hypodermic use.

Except in the case of a sale, transfer or delivery to an ultimate consumer, no person may sell, transfer or deliver any quinine except on receipt of a certificate manually signed by the person purchasing or accepting transfer or delivery or a duly authorized official, in substantially the following form:

> I hereby certify that the quinine ordered hereby is for use as (1) an antimalarial agent or (2) an ingredient of quinine and urea hydrochloride (U. S. P.) for hypodermic use and will not be sold, transferred or delivered by me for any other purpose. This certification is made in accordance with the terms of General Preference Order No. M-131, with which I am familiar.
>
> Name .....
>
> By .....

Any stock of quinine, whether in the form of solution, pill, tablet or capsule, but not including preparations containing quinine which has been combined or compounded with other medicinal agents, consisting of less than 50 ounces physically located at any one place on the effective date of the order will not be subject to these provisions and restrictions. Such stock may be disposed of by the owner without restriction. The order does not apply to purchases by importers of quinine to be delivered from outside the continental United States. Any subsequent dealing in quinine after its importation, however, will be governed by the order. The order does not apply to the purchase, sale or use of any preparation containing quinine which, on the date of the order, has been combined or compounded with other medicinal agents.

Every person having in his control or possession on the date of the order (1) any stock of quinine consisting of more than 50 ounces, whether in the form of solution, pill, tablet or capsule but not including preparations containing quinine which has been combined or compounded with other medicinal agents, which stock is physically located at any one place, or (2) over 50 pounds of cinchona bark must make a report on form PD-401. All reports required to be filed and all communications concerning the order should be addressed to the War Production Board, Health Supplies Branch, Washington, D. C., Ref. M-131.

A violation of the order will constitute a criminal offense. In addition, any person who wilfully violates any of its provisions or who by any act or omission falsifies records to be kept or information to be furnished may be prohibited from receiving any further deliveries of any material subject to allocation.

MEDICAL COLLEGE IN CHINA CLOSED BY JAPANESE

Information has been received that the Peiping University College of Medicine, Peking, China, was closed on February 1 by Japanese military authorities. Dr. Henry S. Houghton, who was director of the college, is reported to be held in custody.

THE DISPATCH OF EMERGENCY CASUALTIES AMONG CIVILIANS

According to Dr. E. L. Keyes, chairman, First Aid Posts Committee, St. Louis, the majority of air raid casualties in the London air raids of 1940 and 1941 were sent to only a few hospitals. St. Louis intends to adopt this plan and to send the first of its war casualties to St. Louis City and Homer Phillips hospitals and to defer the use of its other hospitals until after these two city institutions have become filled.

The full implications of such a policy should be considered before it is adopted.

DATA

1. Experienced surgeons are agreed that the "golden period" for the operative treatment of fresh wounds is eight hours. All war wounds first treated by operation after eight hours are, with few exceptions, badly infected. Every fresh wound should be treated within eight hours, and any delay is a most serious matter and may entail the loss of many lives that could otherwise be saved.

2. Stretcher casualties in St. Louis can be moved from a "war incident" to a hospital at an hourly rate up to three strecher casualties per ambulance per mile, as has been found by test mobilizations.

3. The Office of Civilian Defense states that major operating room casualties received in a hospital can be cleared through the operating room at the rate of three major operative casualties every two hours per operating room with two operating teams.

4. Fractures constitute the bulk of air raid casualties, as may be judged from British figures compiled by Dr. Carl Heifetz. Of 100 air raid casualties, injuries were distributed as follows: Multiple major injuries, 33; lower limbs and hip, 22; upper limb and shoulder, 15; thorax, 12; abdomen, 9; head and neck, 8.

5. An estimate of the number of casualties to be expected may be judged by the following figures: Of every 100 air raid casualties, 30 are killed outright, 42 are stretcher casualties (14 of them sitting) and 28 are walking casualties.

6. Hospitals may well take inventory of their operating room service by estimating how many compound fractures they can treat hourly in the operating room by open reduction and plaster application. A compound fracture is used as a standard merely because it seems to be the most common civilian war injury demanding major surgical attention in the operating room.

CALCULATIONS

7. Hospitals should calculate (from paragraph 6) the number of major open reductions they can clear through their operating rooms in seven hours. Hospitals should assume (from paragraph 2) that it takes the first aid service one hour on the average to transport a casualty from a "war incident" to the hospital. No hospital should be asked to receive more casualties than it can treat operatively within eight hours of injury (see paragraph 1).

TENTATIVE CONCLUSIONS

8. Hospitals will give surprisingly low estimates for the number of major fracture casualties their operating services can clear under paragraph 7. Thus, hospital A may say 15 such casualties, hospital B may say 12 and hospital C may say 6, a total of 33 such casualties in seven hours by three large hospitals.

DISPATCH OF AMBULANCES

9. These data give an accurate way of dispatching ambulances by central control. Assume 33 major compound fractures. Assume an ambulance capacity of 4 stretcher casualties per

vehicle. The 33 casualties require nine ambulances for their transport.

Where should these go? Ambulance 1 may be dispatched to hospital A, ambulance 2 to hospital A, ambulance 3 to hospital A and ambulance 4 (maybe) to hospital A. Ambulances 5, 6 and 7 may be dispatched to hospital B, ambulances 8 and 9 may be dispatched to hospital C.

10. By thus rotating ambulances according to a logical prearranged schedule, overtaxing of the services of any given institution or group of institutions may be avoided.

11. Further, and most important, such rotation insures all the wounded, as far as is humanly possible, of receiving surgical treatment within eight hours of injury; i. e., in the "golden period."

12. The British, we are informed by Dr. Charles G. Bradford of Dr. Philip D. Wilson's American Hospital in London, now believe that this system of rotation of ambulances is preferable to the one they first tried.

ARMY WINTER SICK RATE SHOWS DECREASE

The general health of the Army during the past winter was about 50 per cent better than for the same period a year before, the Surgeon General informed the War Department on April 9. Normally higher admission rates during the winter months are expected. The past winter has been an exception, and sick rates were unusually low. Annual hospital admission rates per thousand for the winter period November to February inclusive for the U. S. Army in the United States show a 50 per cent reduction in admissions from all causes, 52 per cent for disease only and 70 per cent for respiratory infections from those of the corresponding period in 1940-1941. The reductions translated into days added for training, savings in drugs and hospital supplies, transportation and incidentals represent a decided addition to the war effort, not to mention the effect on morale and well being, the report said.

The Surgeon General cites the following factors as making for improvement:

1. Health conditions throughout the United States were very good despite the changes due to war, and no extensive epidemics occurred.

2. The Army was composed of seasoned troops who had months of rigorous training in camps and maneuvers. New men were absorbed in old units.

3. The increase in the Army was limited to the facilities available for housing, supply and hospitalization. In other words, preparations for the care of the soldier were complete before he was called to service.

4. Preventive measures were enforced in the Army to assure proper food, pure water, adequate clothing, ventilation, heating and wholesome exercise and amusement.

5. Surgeons were interested in guarding the health of the command through sick call, sanitary inspections and in the hospital.

APPOINTMENTS IN OFFICE OF CIVILIAN DEFENSE

Dr. Thomas B. McKneely, passed assistant surgeon in the U. S. Public Health Service, has been assigned to the Medical Division, Office of Civilian Defense, Washington, D. C., to assist in the organization of emergency medical services throughout the United States. Dr. McKneely is a native of Louisiana and graduated from Tulane University School of Medicine, New Orleans.——Dr. Burt A. Dyar, since 1939 regional medical officer for the Farm Security Administration, with headquarters in Indianapolis, has been appointed regional medical officer for the Fourth Civilian Defense Region with headquarters in Atlanta. Dr. Dyar is a graduate of the University of Minnesota Medical School and during the first world war attained the rank of lieutenant colonel in the Army Medical Corps. For four years he was executive secretary of the South Dakota State Medical Association.——Dr. Wallace D. Hunt, Regional Medical Officer for the Ninth Civilian Defense Region with headquarters in San Francisco, has been made regional medical officer of the Seventh Region with headquarters at Omaha.——Dr. James M. Mackintosh, professor of public health at the University of Glasgow, has returned to Scotland after spending several months in the United States as a guest of the Rockefeller Foundation, during which time he acted as consultant in medical defense in the Office of Civilian Defense, Washington, D. C., and visited many parts of the United States, lecturing on Emergency Medical Service.

"WAR SESSIONS" AT MINNEAPOLIS AND MADISON

The final two meetings of the series of twenty-five "war sessions" being conducted by the American College of Surgeons will be held on May 1 in Minneapolis and on May 4 in Madison, Wis. The latter meeting was originally announced for April 29 but was postponed because of a conflicting medical meeting. Headquarters for the Minneapolis meeting will be at the Radisson Hotel and for the Madison meeting at the Loraine Hotel. Physicians from Minnesota, North Dakota and South Dakota will participate in the Minneapolis meeting, and those from Wisconsin in the Madison meeting.

Lieut. Col. B. Noland Carter of the Office of the Surgeon General, United States Army, Washington, D. C., will represent the Army, and Capt. Frederick R. Hook, chief of the surgical service, United States Naval Hospital, Washington, D. C., will represent the Navy at both meetings. The Office of Civilian Defense will be represented at the Minneapolis meeting by Dr. Wallace Hunt, Omaha, medical officer, Seventh Civilian Defense Region, and at the Madison meeting by Dr. John S. Coulter of Chicago, medical officer, Sixth Civilian Defense Region. Dr. Harold S. Diehl, member, directing board, Procurement and Assignment Service, will represent that service at the meeting in Minneapolis and Dr. Charles S. Phifer of Chicago, chairman, Sixth Corps Area Committee, will represent the Procurement and Assignment Service at the Madison meeting.

SEATTLE PREPARES

A total of 13,245 volunteers were ready for action with the medical service unit of the Seattle civilian protection division, Dr. M. S. Jared, chief of the unit, announced on March 23. Of these, 11,215 are fully trained and the others are in training. Casualty stations have been organized in schools in each of the air raid zones of Seattle with surgeons, nurses and first aid workers assigned to each zone. Twenty-five ambulances also are assigned to each zone, and first aid workers are being formed into squads to be stationed at drug store first aid posts. A mobile hospital unit is ready for emergencies. Preparations are being made to establish a blood plasma bank under the direction of Dr. Eugene Potter; funds have been appropriated for equipment, including eight freezing units each with a capacity of 500 pints.

NEW JERSEY ORGANIZES EMERGENCY UNITS

Emergency medical units have been organized in five hundred and fifteen of the five hundred and sixty-eight municipalities in New Jersey, according to Dr. C. H. Schlichter, state chief of Emergency Medical Services, the Newark *Evening News* reports. The remaining fifty-three places without units are small communities having no physicians. Seventy-four of the eighty-six general hospitals in New Jersey have organized and equipped units for transporting, treating and providing bed space for victims of air raids and other emergencies. The privately formed first aid and rescue squads for public service have been increased from one hundred and twenty to one hundred and forty and in the last seven months the Red Cross has trained thirteen thousand persons in first aid. It was also announced that the State Laundry Owners Association has made three thousand, eight hundred trucks available for use as ambulances.

DR. ROBERT H. IVY ADDRESSES MEDICAL OFFICERS

The March meeting of the medical department officers residing in Washington and vicinity was addressed on March 16 at the Army Medical Center by Dr. Robert H. Ivy, Philadelphia, on "The Repair of Bony and Contour Deformities of the Face."

PROTECTION OF NEW YORK WATER SUPPLIES

The state of New York has been divided into twenty-three zones for the operation of the state's mutual aid water plan devised for the purpose of preparing each local water authority to meet fully any possible water supply emergency that may arise, Earl Devendorf, state coordinator of water supply, announced recently. A water works official has been appointed as zone coordinator of each one of the twenty-three zones, and district engineers of the state department of health and the sanitary engineers of Nassau, Suffolk and Westchester counties, which constitute separate zones, have been appointed assistant zone coordinators. The program calls for measures aimed at the protection of water supplies, reinforcement of weaknesses of water systems, bringing public water supplies to the highest possible level of operating efficiency, specific planning for emergency operations, and a mutual aid arrangement whereby any community in distress may be supplied promptly with assistance from adjoining or neighboring communities.

APPOINTMENTS TO ILLINOIS COUNCIL OF DEFENSE

Six members of the Illinois Department of Public Health have been appointed as a war measure by Governor Green to serve in various capacities with the State Council of Defense. Dr. Roland R. Cross, director of the department, will act as chief of the Emergency Medical Services in Civilian Defense, with Dr. H. L. Pettitt serving as his assistant. Dr. Pettitt, who is assistant director of the state health department, will serve also as emergency medical service coordinator of the Civil Protection Committee. Mr. C. W. Klassen, chief sanitary engineer of the state health department, has been appointed chairman of the sanitation division of the Defense Council's health committee. Miss Maude Carson, chief public health nurse of the state, will act as chairman of the nurses' advisory committee in the civilian defense effort. Dr. C. F. Deatherage, chief of the health department's dental division, will be a member of the dental advisory committee. Dr. Herman M. Soloway, the state's venereal disease control officer, has been made a member of the medical advisory committee, under the chairmanship of Dr. Charles H. Phifer, president of the Illinois Medical Society.

MEDICAL AND SURGICAL RELIEF COMMITTEE

In keeping with its policy of giving first consideration to our own country's requirements, the Medical and Surgical Relief Committee of America, 420 Lexington Avenue, New York City, has offered to hold all donated supplies for final disposition by the Surgeon General, in the meantime continuing the work of collecting, selecting, reconditioning and redistributing the supplies to recognized relief agencies in America and allied nations.

The committee has recently presented seven emergency medical field sets to New Jersey hospitals and three emergency medical field sets to the Third Naval Base at Bayonne, N. J.

The largest amount ever contributed to the committee in a single month was received during February. Of the total of $44,701.46, there was earmarked $27,244.55 for the Free Norwegians, the Free French and the Chinese.

TEMPORARY BRIGADIER GENERALS

Col. James E. Baylis, Medical Corps, U. S. Army, has been promoted to the temporary grade of brigadier general. General Baylis is in command of the medical replacement training center at Camp Joseph T. Robinson, North Little Rock, Ark.—Col. George C. Dunham, Medical Corps, U. S. Army, also has been promoted to the temporary grade of brigadier general and, as previously stated, is to head a mission to Ecuador to undertake malaria control, improvement of sewage disposal and other sanitary measures in cooperation with the Ecuadorean government.—Brig. Gen. Raymond F. Metcalfe, who retired last year, has returned to active duty in the grade of colonel and assigned to surgeon of the Port of Embarkation of San Francisco.

CLASS OF AVIATION MEDICAL EXAMINERS

The following class of aviation medical examiners was graduated on March 28 at the School of Aviation Medicine, Randolph Field, Texas, following a course of study which began January 5:

Capt. John M. Adams
1st Lieut. Lambert J. Agin
1st Lieut. Osmund H. Akre
1st Lieut. Martin M. Alexander
1st Lieut. Olaf W. Allison
Capt. Robert C. Anderson
Major Royal S. Anspach
Capt. Max B. Backer
1st Lieut. John D. Barker
Capt. Karl L. Bergener
Capt. George C. Bess
Major Marshall M. Best
1st Lieut. John F. Blalock Jr.
1st Lieut. Richard M. Block
1st Lieut. Herbert N. Boden
1st Lieut. Charles W. Braselton Jr.
1st Lieut. George M. Campbell
1st Lieut. Kenneth D. Campbell
1st Lieut. William H. Carter
Capt. Frank Clearly
Capt. Felix H. Crago
1st Lieut. William Davis
Capt. James A. Devereux
1st Lieut. John R. Dixon
1st Lieut. Charles H. Dow
Major Grant R. Elliott
Major Juan Manuel Fiallos, Honduranian Army
Major Richard S. Fixott
1st Lieut. Sylvester C. Ford
Capt. Herman W. Gaddis
1st Lieut. Edward W. Gans
1st Lieut. Frederick R. Guilford
1st Lieut. Dalton C. Hartnett
Capt. Arch D. Harvey
Capt. Marvin T. Haw Jr.
Capt. Robert C. Hecker
Capt. Edward A. Heffner
Capt. Robert S. Hellmann
Capt. Joseph R. Henry
1st Lieut. George J. Hinn
Capt. George Hopson
Major Ernest E. Howerton
Capt. Oscar E. Hubbard
Capt. Lawrence B. Hudson
1st Lieut. Nathan W. Hyland
Capt. William M. Jackson
1st Lieut. Ralph E. Jordan
Capt. Hyman J. Kaplan
1st Lieut. Mavis P. Kelsey
1st Lieut. George M. Knauf
Capt. Roland D. Lamb
1st Lieut. Milton Layden
1st Lieut. Fred J. Loughran
1st Lieut. Arthur E. MacNeill
1st Lieut. Stephen L. Magness
1st Lieut. John J. Manning
1st Lieut. Harry E. Mantz
1st Lieut. Samuel H. Marder
1st Lieut. George J. Merriman
1st Lieut. Abe Mickal
1st Lieut. John A. Moran
Capt. Paul F. Mueller
1st Lieut. Harold D. Munal Jr.
1st Lieut. Irving Nelson
1st Lieut. Robert H. Newell
1st Lieut. Robert E. Nuernberger
Capt. Leroy H. Oetjen
Capt. Ernest B. Oliver
1st Lieut. Albert Owers
Capt. Wilmer H. Paine
1st Lieut. Alvin L. Perry
Capt. Robert R. Pinger
1st Lieut. Ross G. Randall
Capt. Merrill J. Reeh
Capt. Francis Z. Reinus
Capt. Dale A. Rice
Capt. Howard Robinson
1st Lieut. Leo D. Robinson
Capt. Joseph L. Roy
Capt. Ralph E. Russell
1st Lieut. Louis Ryterband
1st Lieut. Edward R. Schumacher
1st Lieut. Jesse W. Shaw
1st Lieut. Lewis A. Shepperd
1st Lieut. Thurman Shuller
Capt. Robert C. Simpson
1st Lieut. Thomas W. Smith
1st Lieut. William L. Smith
Capt. Edward Sosson
1st Lieut. Vincent A. Spinelli
1st Lieut. Frederick C. Stansbury
1st Lieut. James A. Sutton
Capt. Charles H. Talbott
Capt. Ralph C. Teall
1st Lieut. Frank B. Waldorf
1st Lieut. Warren S. Wallace
Capt. William W. Washburn
Capt. James E. Watson Jr.
1st Lieut. Roy C. Weinstein
1st Lieut. Raphael J. Weisberg
Capt. Paul S. Woodall
1st Lieut. John A. Woodworth
1st Lieut. Leslie W. Young
Capt. Herman A. Zampetti
1st Lieut. Carl E. Zeithaml
1st Lieut. Frederick A. Rose

"CABULANCES" AND "SNIFF" SETS FOR WASHINGTON, D. C.

The Army Chemical Warfare Service began the delivery of seventy-five sets of "gas sniffers" on March 28 to the air raid service, Washington, D. C., according to Clement Murphy, the chief air raid warden. These sets, according to the *Times Herald*, are expected to be of help in instructing wardens in the identification of war gases and in gas decontamination.

The District of Columbia's first mass demonstration of the use of taxicabs equipped with stretchers—"cabulances"—took place on March 27. More than a hundred cabs picked up emergency squads of doctors, nurses and nurses' aides at eighteen hospitals, and, after unloading, continued to pick up "bomb victims" and take them to the hospitals. The work of the "cabulances" was supplemented by delivery trucks, also equipped to carry stretchers.

REPLACEMENT TRAINING CENTER MOVED

The Medical Department Replacement Training Center at Camp Lee, Va., will be moved about June 1 to Camp Pickett, Va., thus freeing the entire reservation at Camp Lee for the use of the Quartermaster Corps. According to the *Army and Navy Journal* Brig. Gen. William R. Dear, M. C., will remain in command of the Medical Department Replacement Center when it moves to Camp Pickett, where training facilities will have a greater capacity than at Camp Lee.

MOBILE RED CROSS UNITS

The War Production Board has granted priority ratings to the American Red Cross for the construction of limited numbers of ambulances, mobile canteens and disaster relief units. In the design of these units, consideration was given to the study made by the Red Cross observers of disaster relief in Great Britain during the heavy German bombings and of civilian mass feeding. Construction of these new Red Cross units, Chairman Norman H. Davis said on March 17, is necessary because of the increased threat of enemy bombing over American soil and because the Red Cross cannot apply to the armed forces for extra equipment during wartime as it could in peacetime. The equipment will comprise two types of 1 ton mobile canteens similar to those used in Great Britain, a 1½ ton mobile canteen, a custom built body for canteen service suitable for mounting on different types of chassis, an all service mobile disaster relief unit and five army type ambulances. The custom built canteen can feed civilian disaster victims from four windows, whereas the average canteen has but two windows for service.

Many Red Cross chapters, Mr. Davis announced, have received offers from civic groups and individuals to contribute to the purchase of this equipment. Prices for the mobile units range from about $1,300 to $3,000.

NEGRO MEDICAL OFFICERS GRADUATE AT CARLISLE BARRACKS

Twenty-two Negro officers of the medical department were graduated from the Medical Field Service School of the army at Carlisle Barracks, Pa., April 4, after four weeks' training for duty in the medical battalion of a new division. The special course completed was designed to prepare officers for the particular assignments they will have in the medical battalion. The twenty-two officers called to duty from civil life are all first lieutenants in the Army of the United States, eighteen being medical and four dental officers, representing thirteen states and the District of Columbia.

This class brought to a total of fifty-one the number of Negro officers and enlisted men graduated from the Medical Field Service School since a state of emergency was declared by President Roosevelt. The class graduating on April 4 was composed exclusively of Negro officers; ordinarily Negro officers are members of the regular classes.

The roster of the officers in the class which graduated on April 4 is as follows:

MEDICAL CORPS

Orion T. Ayer, Gainesville, Fla.
James A. Brown, Hopewell, Va.
Henry C. Bryant, North Birmingham, Ala.
Albert C. Burwell, Baltimore.
Jesse S. Chandler, Nashville, Tenn.
Lincoln B. Childs, Gainesville, Fla.
Henry I. Davis, Galveston, Texas.
Albert H. Dyson, Dallas, Texas.
Luther J. Lemon, McDonough, Ga.
Charles L. Lomack, Washington, D. C.
Rudolph H. Porter, Austin, Texas.
William B. Price, Fayetteville, N. C.
Harry L. Riggs, Detroit.
Benjamin W. Satterfield, St. Louis.
Lincoln W. Shumate, Washington, D. C.
William B. Smith, Indianapolis.
Roger G. Thurston, Washington, D. C.
Harold H. Whitted, Washington, D. C.
Oncey M. Whittier, San Antonio, Texas.

DENTAL CORPS

Paul S. Binford, York, Pa.
Elbert L. Bookey, New York.
Emmett I. Brown, Indianapolis.

MEDICAL AREAS FOR MUTUAL ASSISTANCE

Following a meeting of state coordinators in Seattle the northwest counties of Washington will form immediately medical areas for mutual assistance in case of war emergency. According to the Bellingham *Herald*, coordinator W. J. Kaigler said on his return from the meeting that county representatives met on March 18 at Bellingham to check resources and designate medical areas so that one area may draw from another, if necessary.

MEDICAL DEPARTMENT PROMOTIONS

According to the *Army and Navy Journal*, the following majors of the medical corps were promoted in March to be lieutenant colonels:

Leon L. Gardner
Arthur B. Welsh
Martin E. Griffin
Alvin L. Gorby
Frank B. Wakeman
Paul I. Robinson
Silas B. Hays
Karl R. Lundbert
William S. Stone
Thomas Neilson Page
Joseph H. McNinch

The following captains of the medical corps were promoted to the grade of major:

Bryan C. T. Fenton
Charles H. Moseley
James T. McGibony
John K. Davis
Louis F. Hubener
Lee P. Mayes
Daniel J. Sheehan
Earl C. Lowry
John J. Peloni
Theodore C. Bedwell Jr.
Richard Reynolds
Robert J. Goldson
Aaron L. Kaminsky

INSTRUCTION IN TROPICAL MEDICINE FOR ARMY OFFICERS

Between Aug. 1, 1941 and Jan. 1, 1942 one hundred and eight officers of the Medical Corps of the Army graduated from the course in tropical medicine at the Army Medical School, Washington, D. C. Twenty-four additional officers graduated late in February following the two months course. Among those who lectured to this class were Rear Admiral E. R. Stitt, U. S. Navy, retired, Drs. Charles Armstrong, R. E. Dyer, Edward Francis, L. L. Williams Jr. and W. G. Workman of the U. S. Public Health Service and Dr. F. C. Bishopp of the U. S. Department of Agriculture. A new class with about the same number of officers in attendance took up the course on March 2.

LOS ANGELES PREPARES FOR CIVILIAN CASUALTIES

At a joint meeting of the hospital committee of the Los Angeles city and county defense councils on March 27 a plan was announced that provides four thousand five hundred emergency hospital beds in case of need of medical service. At that time a sufficient quantity of blood plasma was needed, but it would be provided within a few weeks, the county health officer is reported to have said. There will be nearly two hundred casualty stations in Los Angeles County, each stocked with medical supplies.

STATE HOSPITAL AVAILABLE FOR CHRONIC CASES

Mayor F. H. LaGuardia, according to the New York *Herald Tribune*, has received assurance from Governor Herbert H. Lehman that the facilities of the Willow Brook State Hospital on Staten Island will be available for chronic cases transferred from city hospitals to make room for casualties in the event of enemy action against New York City. When the hospital is completed, it will accommodate between three and four thousand persons.

CHIEF OF VETERINARY CORPS PROMOTED TO BRIGADIER GENERAL

The Senate confirmed on March 7 President Roosevelt's nomination of Col. R. A. Kelser, chief of the U. S. Army Veterinary Corps, for the rank of brigadier general. Dr. Kelser entered the Army as a second lieutenant in the veterinary section of the officers' reserve corps in June 1917 and has advanced through the various grades since that time.

MILWAUKEE PREPARES FOR EMERGENCIES

The Milwaukee *Journal* states that 1,056 physicians, nurses, first aid workers and others were being recruited in March to man one hundred and eight first aid posts, casualty stations and base hospitals for war emergencies in Milwaukee County, according to Dr. H. W. Sargeant, chief of the emergency medical service. In addition, four mobile first aid stations had been completed, ambulances had been assigned and control telephone lines installed.

ORGANIZATION SECTION

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.—Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

MEMBERSHIP

The official membership list of the American Medical Association as of April 1, 1942 included the names of 120,701 physicians as compared with 118,441 enrolled members on the corresponding date in 1941. The deaths of 1,824 members were recorded in 1941.

The usual tabulation pertaining to the organization of constituent state and territorial medical associations, the total number of counties, the number of component county medical societies, the number of unorganized counties and the number of physicians as shown by the latest available information is included as a part of this report. The accompanying table also reflects the number of members on April 1, 1941 and on April 1, 1942 as reported by each constituent state and territorial medical association and the number of Fellows in each state and territory. It is possible that there may be a slight difference in the number of members as shown by the official records of an individual constituent association and the number presented in the accompanying table, largely for the reason that official reports may have been unavailable at the time the table was prepared.

FELLOWSHIP

The official Fellowship roster carried 73,747 names on April 1, 1942 as compared with 72,504 on the same date in 1941.

During the year the deaths of 836 Fellows were reported to the Secretary's office.

ANNUAL CONFERENCE OF SECRETARIES OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

The regular Annual Conference of Secretaries of Constituent State Medical Associations was held in the Assembly Room of the Association's building in Chicago on Nov. 14 and 15, 1941 and was attended by nearly all the state secretaries and editors of state medical journals, as well as by a goodly number of officers and members of official bodies of constituent associations and component societies. One entire section of the program of the conference and a part of another section were devoted to discussions of various phases of the national defense program and of the relations of physicians with the military forces.

THE AMERICAN MEDICAL ASSOCIATION AND THE WAR

As will be shown in several official reports to be submitted to the House of Delegates, the American Medical Association has attempted to discharge fully its duty to the nation and to medicine during the emergency created by the world war. Every elected officer of the Association, many members of its official bodies and a large part of its administrative personnel have been almost continuously engaged in activities, designed to be helpful to official governmental agencies, pertaining directly to the national defense program. A large part of the time of the Secretary and his office staff has been devoted to such duties.

Organization of Constituent State and Territorial Medical Associations, April 1, 1942

	Number of Counties in State	Number of Component Societies	Organization of Constituent Associations					Number of Fellows in State
			No. of Counties Not Organized		No. of Physicians in State, 16th Ed. A. M. A. Directory	Number of Members of State Associations		
			1941	1942		1941	1942	
Alabama	67	67	..	..	2,675	1,576	1,564	632
Arizona	14	13	1	1	594	374	380	277
Arkansas	75	58	11	11	1,829	1,042	1,065	447
California	58	40	8	8	11,980	6,743	6,987	4,548
Colorado	63	37	1	1	1,964	1,162	1,179	744
Connecticut	8	8	..	..	2,598	1,753	1,843	1,140
Delaware	3	3	..	..	339	230	248	149
Dist. Columbia	..	..	..	..	2,243	917	908	680
Florida	67	33	16	17	2,276	1,291	1,287	771
Georgia	159	95	37	37	2,825	1,937	1,951	654
Idaho	44	10	..	..	423	316	321	171
Illinois	102	92	6	6	12,188	7,991	8,252	4,903
Indiana	92	83	1	1	4,132	2,249	2,362	1,562
Iowa	99	97	..	..	3,084	2,464	2,462	1,381
Kansas	105	71	18	17	2,070	1,564	1,580	964
Kentucky	120	114	3	3	2,761	1,938	1,887	828
Louisiana	64	42	15	15	2,464	1,551	1,547	785
Maine	16	15	..	..	992	732	756	388
Maryland	23	23	..	..	2,988	1,528	1,596	992
Massachusetts	14	18	..	..	7,869	5,367	5,431	3,182
Michigan	83	54	..	..	6,702	4,246	4,371	2,272
Minnesota	87	34	1	1	3,527	2,794	2,934	1,559
Mississippi	82	21	3	3	1,497	953	986	337
Missouri	114	78	8	8	5,297	3,264	3,279	2,055
Montana	56	17	21	21	537	415	442	256
Nebraska	93	50	16	16	1,655	1,156	1,159	660
Nevada	17	5	12	12	167	120	125	65
New Hampshire	10	10	..	..	456	343	339	206
New Jersey	21	21	..	..	5,813	3,928	4,211	2,760
New Mexico	31	14	16	17	439	278	281	155
New York	62	61	1	1	27,396	17,905	18,255	11,414
North Carolina	100	67	24	24	2,749	1,850	1,854	805
North Dakota	53	13	11	11	518	396	401	202
Ohio	88	87	1	1	9,318	6,529	6,908	4,412
Oklahoma	77	64	7	7	2,552	1,567	1,449	702
Oregon	36	25	2	2	1,461	866	906	523
Pennsylvania	67	60	6	6	17,529	9,531	9,749	6,221
Rhode Island	5	6	1	1	961	515	583	347
South Carolina	46	37	4	4	1,402	948	897	438
South Dakota	69	12	1	1	578	331	321	187
Tennessee	95	57	24	24	2,908	1,752	1,748	847
Texas	254	138	5	..	6,898	4,586	4,459	2,255
Utah	29	9	4	4	575	476	487	264
Vermont	14	10	3	3	323	283	293	202
Virginia	100	50	8	8	2,860	1,761	1,826	1,121
Washington	39	24	12	13	2,260	1,537	1,591	937
West Virginia	55	50	5	5	1,834	1,274	1,291	705
Wisconsin	71	52	..	..	3,523	2,569	2,569	1,547
Wyoming	24	11	11	11	274	179	192	116
Alaska	..	..	..	..	74	41	40	21
Hawaii	5	4	1	1	455	291	320	129
Isthmian Canal Zone	..	..	..	..	216	124	123	25
Philippine Isl. (Provinces)	56	36	20	20	3,445	1,951	1,950	43
Puerto Rico	7	7	..	..	473	395	402	76
Foreign	..	..	..	..	59	.....	.....	161
	3,139	2,603	355	352	180,075	118,441	120,701	70,966
Commissioned medical officers								2,541
								73,747

SUBMISSION OF MEMORIALS AND RESOLUTIONS

Several communications have been received during the past year from members of the House of Delegates and from others suggesting and in some instances demanding that memorials

and resolutions to be submitted to the House at an annual session should be sent to the Secretary in time for them to be printed in the Handbook of the House of Delegates. This matter is respectfully submitted to the House of Delegates for such consideration as the House may believe to be indicated.

PROPOSED AMENDMENT TO THE CONSTITUTION

The following resolution containing a proposed amendment to the Constitution was presented to the House of Delegates at the Cleveland session in 1941, and, in accordance with the provisions of the Constitution, the amendment proposed in the resolution will be before the House of Delegates for action at the Atlantic City Session:

WHEREAS, The Board of Trustees of the American Medical Association was set up at a time when numerically the Association was approximately one-third its present strength; and

WHEREAS, Because of the great variety of conditions existing throughout the country, largely because of geographic and population problems, it seems desirable to provide a greater spread of membership for the Board, even though it is not at all a matter of representation in the sense that the House of Delegates is a representative body; therefore be it

Resolved, That article 6, section 1 of the Constitution of the American Medical Association be amended by substituting the word "eleven" for the word "nine" as the last word of the fourth line of that section, so that article 6, section 1, will then read: "SECTION 1.—The general officers of the Association shall be a President, a President-Elect, a Vice President, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates, and eleven Trustees"; and be it further

Resolved, That article 6, section 3 of the Constitution of the American Medical Association be amended to read as follows:

"SEC. 3.—Two Trustees shall be elected annually except every fifth year, when three shall be elected, each to serve for five years, or until his successor is elected and installed: Provided, that at the session of the House of Delegates at which this amendment is adopted three Trustees shall be elected to serve five years and one to serve four years. No Trustee shall serve for more than two consecutive terms, but a Trustee elected to serve an unexpired term shall not be regarded as having served a term unless he has served three or more years."

SUSPENSION OF PAYMENT OF DUES BY PHYSICIANS IN MILITARY SERVICE

A large number of communications have been received from physicians who have been called to active duty with the military forces of the nation pertaining to the suspension of payment of Fellowship dues.

It appears that a number of constituent state medical associations and a much larger number of component county medical societies, by the adoption of resolutions or under authorization provided in their by-laws, have suspended the payment of membership dues in whole or in part by members who have been assigned to active duty. As there is no provision whatever in the Constitution and By-Laws of the American Medical Association for the suspension or remittance of Fellowship dues, the Secretary has been compelled, in replying to communications of the nature aforementioned, to state that no such authorization exists.

There seems to be some confusion in the minds of many members with respect to dues paid to the American Medical Association. No member of the American Medical Association as such is required to pay dues to the American Medical Association, nor does any part of membership dues paid to component county medical societies or constituent state or territorial medical associations accrue to the American Medical Association. Only those members who have qualified as Fellows of the American Medical Association are required to pay dues to the Association.

IN APPRECIATION

This session of the House of Delegates marks the twentieth year in which the present incumbent has served as Secretary of the American Medical Association. As in each previous year, an expression of grateful appreciation is offered to the members of this House, to all the officers of the Association and members of its administrative personnel and to the officers and members of state and territorial medical associations and county medical societies for the kindly consideration, assistance and encouragement extended to the office of the Secretary.

Respectfully submitted.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The Board of Trustees respectfully submits to the House of Delegates the following report pertaining to the general affairs of the Association and to the activities of its various councils, bureaus and departments during the past year. Reports of those councils that are standing committees of the House of Delegates will be separately submitted.

The usual quarterly meetings of the Board of Trustees and the usual monthly meetings of the Executive Committee of the Board were held. At various times during the year representatives of other organizations have conferred with the Board of Trustees or with its Executive Committee. At these conferences matters of important interest to the organizations represented and to the whole cause of American medicine have been considered. Recently an important conference participated in by the Executive Council of the Association of American Medical Colleges and the members of the Council on Medical Education and Hospitals and of the Board of Trustees of the American Medical Association was held in Chicago. As a result of this conference, committees were appointed to represent the Executive Council of the Association of American Medical Colleges and the Council on Medical Education and Hospitals for the purpose of outlining plans for establishing more complete cooperative relations between these two important groups.

It is not possible to include in the annual report of the Board of Trustees reference to all the many and varied problems that come before this body for consideration. Many matters not referred to in this report have received the official attention of the Board and final disposition has been made. Many other matters that have been presented to the Board have not required official action or are still under consideration.

The general officers of the Association, including the President, the President-Elect, the Vice President and the Speaker of the House of Delegates, have attended most of the meetings of the Board of Trustees and have actively participated in the consideration and discussion of matters requiring attention. The Board of Trustees greatly appreciates the active interest and the helpful counsel of these officers.

Income and Expenditures

On the recommendation of the auditors of the Association, some changes have been made in accounting methods so that in the future the valuation of property and equipment will be made on the basis of costs. The reserves that were heretofore created will be continued and a depreciation reserve will be reflected in the annual reports submitted by the auditors. The Report of the Auditor and the Report of the Treasurer for the year ended Dec. 31, 1941 are submitted as a part of this report of the Board of Trustees.

Gross income from all sources for the year ended Dec. 31, 1941 amounted to $1,939,127.39, representing an increase of $62,773.59 above the gross income for the previous year. Total expenditures amounted to $1,715,779.75, an increase of $27,194.25 over the total expenditures for the previous year.

Fellowship dues and subscriptions were received in the amount of $795,460.48, which is the largest income that has ever been produced from these sources and which exceeds income similarly derived for the year 1940 by the sum of $19,258.04. Since it is certain that thousands of physicians will be called into service as medical officers of the Army and Navy and of other federal agencies, it is possible that income to be derived from Fellowship dues and subscriptions to the Association's publications may be materially reduced for the current year and for each year during the continuation of the great world war.

Income received from advertising in the Association's publications for which advertising is accepted amounted to $1,009,853.96, which exceeds the highest income produced from this source heretofore by the sum of $3,735.82 and is greater by the sum of $40,272.71 than income received from advertising in the preceding year.

Interest received on investments in 1941 amounted to $77,424.09 as compared with $80,571.91 received from the same source in 1940. The shrinkage in income received from this source has continued over a period of several years because of a general

reduction in interest rates and inability to replace securities that have matured or have been called with other securities of equal yield, and also because of the difficulties involved in making satisfactory investments. It is the policy of the Board of Trustees to invest the funds of the Association available for investment with a view to security rather than with a view to securing greater interest returns. The face value of securities held in the Association's portfolio that are in default or partially in default of interest payments amounts to $43,400. The accumulated unpaid interest on defaulted and partially defaulted bonds as of Dec. 31, 1941 amounted to $4,620.

The net income for the year 1941 as shown by the Report of the Auditor was $223,347.64, of which amount $77,424.09 was interest on investments.

The amount expended for paper used in the publication of THE JOURNAL in 1941 was $260,190.99 as compared with an expenditure of $230,775.35 in the preceding year. The cost of paper advanced steadily through the year covered by this report, but the full import is not reflected in the figures here presented for the year 1941 for the reason that not all of these increases were effective during the entire year. It is possible and perhaps very probable that additionally increased prices may become effective during the current year. An earnest effort is being made to avoid wastage and otherwise to conserve paper supplies.

Total expenditures for wages and salaries applicable to THE JOURNAL account for the year ended Dec. 31, 1941 amounted to $540,800.30, as compared with expenditures of $504,564.69 for the preceding year. This increase does not reflect to the fullest extent the higher wage rates which became effective on various dates during the year for different groups of workers, and it is possible that further adjustments will have to be made during the present year. Because of higher costs of living and because of a tremendously increased demand for office personnel, it became necessary to make numerous salary adjustments and to employ additional personnel in some departments, especially in those concerned with the preparation and publication of a new edition of the American Medical Directory and with the work incident to the maintenance of cooperation with the government in the national defense program. For the first time in many years, great difficulty has been experienced in maintaining the necessary working personnel because of the tremendous demands of federal agencies and industries of the nation. These difficulties seem to be increasing rather than diminishing. The cost of practically all materials used by the Association has grown larger, and in some instances increases in costs have been considerable in amount.

Expenses involved in the maintenance of various councils, bureaus and committees of the Association amounted to $460,513.58 as compared with expenditures of $482,510.35 in the preceding year. The reduction in such expenditures is in part due to losses in personnel that, in some instances, it has not yet been possible to replace satisfactorily and the consequent suspension of payment of salaries or wages. When existing vacancies can be satisfactorily filled, the decrease in expenditures for the maintenance of these official agencies of the Association will not recur.

Legal and investigation expenses in 1941 amounted to $119,183.19, as compared with $112,345.16 in 1940.

A building formerly used for storage purposes, which did not provide adequate space and was not so constructed as to permit the storage of heavy supplies, and an old residence building that has been utilized for some years were razed during the year, and a new storage building has been erected adjoining the main building of the Association. This new building is three stories in height and is so constructed that, if it becomes necessary, additional stories can be added. The cost of this building, which is not yet altogether completed, will be approximately $215,000.

The buildings and other properties of the Association have been well maintained, and all possible effort has been exerted to effect and maintain economies to a degree that will not interfere with efficient operations.

The number of employees at the time of preparation of this report was six hundred and forty-four, and the Board of Trustees desires to acknowledge with gratitude the faithfulness, efficiency and loyalty of those in its service. A considerable number of employees in the office forces and in the mechanical departments have been in the service of the Association for from fifteen to thirty-five years and, in a few instances, for even longer periods.

Summary

Gross income from all sources for the year 1941 amounted to $1,939,127.39, representing an increase over the preceding year of $62,773.59. Income received from Fellowship dues and subscriptions was $795,460.48, exceeding income from the same source in 1940 by the sum of $19,258.04. Income from the sale of advertising space was $1,009,853.96, exceeding that received in the previous year by $40,272.71. Interest received on investments in 1941 amounted to $77,424.09 as compared with a similar income in 1940 of $80,571.91. The face value of defaulted or partially defaulted bonds amounted to $43,400, and the accumulated unpaid interest on such bonds was $4,620. The cost of paper used in the publication of The Journal was greater in 1941 than in the preceding year by the sum of $29,415.64. Expenditures incident to the operation of the various councils, bureaus and departments of the Association were $460,513.58, approximately $22,000 less than in the preceding year. Expenditures for legal services and investigations amounted to $119,183.19 as compared with expenditures for the same purposes in 1940 of $112,345.16. A new storage building, not yet completed, was erected during the year and will cost the Association approximately $215,000. Net income for 1941 as shown in the Report of the Auditor was $223,347.64, of which $77,424.09 represented interest on investments. At the time of preparation of this report there were six hundred and forty-four persons in the employ of the Association.

The Journal of the American Medical Association

The amount of material published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has become so great that the Board of Trustees has determined to issue three volumes annually with an index in April, August and December in order to provide for bound volumes that can be of more easy use in libraries and for other purposes.

During the year modifications have been instituted making possible the use of special announcements on the cover of THE JOURNAL concerning important activities related to the war. These bulletins have met with wide approval from the medical profession.

The title of the section of THE JOURNAL devoted to Medical Preparedness has been changed to Medicine and the War. Complete cooperation from the Army, the Navy, the United States Public Health Service, the Procurement and Assignment Service, the Office of Civilian Defense, the Office of Defense Health and Welfare Services, the Selective Service System and, indeed, every other governmental agency has enabled THE JOURNAL to serve as an important medium with respect to keeping the medical profession aware of its responsibilities and its duties in relation to the war.

Special articles on the use of the United States Pharmacopeia, on glandular physiology and therapy and on many other topics have been received by physicians with approval.

THE JOURNAL continues to serve as a medium for reports of the official bodies of the American Medical Association. Special sections devoted to the work of the Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Council on Foods and Nutrition, the Committee on American Health Resorts, the Committee to Study Air Conditioning, the Council on Industrial Health, the Council on Medical Education and Hospitals and many other bodies have been of immense value to the medical profession.

The war continues to interfere seriously with the receipt of correspondence and medical periodicals from foreign countries, although letters are received regularly from London and occasionally from France and Switzerland. In the meantime, arrangements have been made to cooperate with governmental agencies in promoting interchange of scientific work with the Latin American nations. THE JOURNAL now has regular correspondents in Buenos Aires, Argentina; Rio de Janeiro and

São Paulo, Brazil; Santiago de Chile; Havana, Cuba, and Mexico City. Through cooperation with the American Library Association, arrangements are being completed whereby interchange of scientific publications even with the warring nations will be facilitated. This will, of course, add to the material utilized in the Current Medical Literature department of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

TABLE 1.—*Approximate Count of Fellows and Subscribers on The Journal Mailing List, by States, Jan. 1, 1942; Also Gain or Loss in Each State*

State	Fellows	Subscribers	Totals	Gain	Loss
Alabama	581	301	882	44	..
Arizona	256	142	378	15	..
Arkansas	291	174	465	..	2
California	4,180	2,675	6,855	255	..
Colorado	657	318	955	30	..
Connecticut	1,054	678	1,712	11	..
Delaware	130	87	217	..	3
District of Columbia	658	597	1,255	..	8
Florida	802	509	1,311	105	..
Georgia	725	524	1,249	130	..
Idaho	143	97	240	..	5
Illinois	4,346	2,771	7,117	..	116
Indiana	1,732	598	2,330	..	85
Iowa	1,188	393	1,581	..	71
Kansas	829	327	1,147	17	..
Kentucky	745	401	1,146	23	..
Louisiana	744	505	1,249	163	..
Maine	361	165	526	..	23
Maryland	945	709	1,654	77	..
Massachusetts	2,848	1,655	4,503	109	..
Michigan	2,233	1,458	3,791	172	..
Minnesota	1,538	665	2,203	..	25
Mississippi	342	225	567	73	..
Missouri	1,811	814	2,625	..	46
Montana	292	101	393	..	11
Nebraska	604	225	829	..	51
Nevada	61	38	101	..	..
New Hampshire	276	117	393	25	..
New Jersey	3,324	1,300	4,624	..	5
New Mexico	146	88	234	..	10
New York	10,105	5,941	16,046	169	..
North Carolina	859	639	1,470	139	..
North Dakota	201	96	297	4	..
Ohio	3,863	1,374	5,237	76	..
Oklahoma	644	292	936	..	5
Oregon	454	325	779	21	..
Pennsylvania	5,607	2,674	8,281	226	..
Rhode Island	329	216	545	25	..
South Carolina	442	266	708	81	..
South Dakota	170	86	256	..	33
Tennessee	763	484	1,247	59	..
Texas	2,001	1,131	3,132	213	..
Utah	215	98	313	..	16
Vermont	187	72	259	..	18
Virginia	1,092	567	1,659	187	..
Washington	872	492	1,364	111	..
West Virginia	608	299	907	..	13
Wisconsin	1,356	590	1,946	..	58
Wyoming	102	60	162	9	..
U. S. Army	...	357	357	180	..
U. S. Navy	...	610	610	300	..
U. S. P. H. S.	...	99	99	..	7
Alaska	29	46	75	27	..
Canada	10	729	739	64	..
Cuba	6	191	197	63	..
Hawaii	120	127	247	44	..
Mexico	8	162	170	22	..
Panama	36	55	91	23	..
Philippine Islands	49	212	261	25	..
Puerto Rico	73	95	168	33	..
Virgin Islands	..	4	4	..	2
Foreign	95	2,743	2,838	..	86
Advertisers and agents	..	..	497	..	27
Exchanges	..	..	244	..	67
Complimentaries	..	..	120	..	17
Total on mailing list			104,803	3,341	817

The Organization Section of THE JOURNAL has been especially devoted to consideration of modifications that have been developed in plans for wider distribution of medical service and of hospitalization. The factual data thus made available are of the utmost importance in guiding the development of such services.

The number of subscribers to THE JOURNAL continues to increase, although it is anticipated that the entrance of considerable numbers of physicians into military service may have a somewhat adverse effect on the circulation, at least temporarily.

Table 1 accompanying this report indicates the number of Fellows and subscribers on the mailing list of THE JOURNAL in each state and territory on Jan. 1, 1942 and also shows the number of Fellows and subscribers in other countries, the number of copies of THE JOURNAL sent to advertisers and subscription agents and the number sent as exchange or complimentary copies. Table 2 shows the number of physicians in each state as indicated by the Sixteenth Edition of the American Medical Directory, the number of physicians in each state who receive THE JOURNAL and the approximate percentage of such physicians.

The net paid weekly average circulation in 1941 was 100,027 as compared with 98,002 in 1940. The delivery of material to some foreign countries has been entirely suspended, resulting in a reduction of the number of foreign subscribers. The total number of copies of THE JOURNAL printed in 1941 was 5,350,113.

Summary

The amount of material published in The Journal has become so great that it has been determined to issue three volumes annually with indexes in April, August and December.

During the year modifications were instituted, so that special announcements concerning important activities connected with the war now appear at intervals on the front cover. The title of the Medical Preparedness Section of The Journal has been changed to Medicine and the War. The close cooperation that has been maintained with practically every governmental agency has enabled The Journal, through the publication of material in this section, to serve as an important medium for keeping the medical profession aware of its responsibilities and duties in relation to the war.

Special articles on many topics of immediate and important interest to the medical profession as well as reports prepared by the various official bodies of the Association were published during the year and were received with approval.

TABLE 2.—*Percentage of Physicians Receiving The Journal* *

State	Number Receiving Journal	Physicians in A. M. A. Directory	Approximate Percentage Receiving Journal
Alabama	882	2,075	43
Arizona	378	594	64
Arkansas	465	1,529	31
California	6,855	11,969	58
Colorado	955	1,594	60
Connecticut	1,712	2,598	66
Delaware	217	339	64
District of Columbia	1,255	2,243	56
Florida	1,311	2,276	58
Georgia	1,249	2,825	44
Idaho	240	423	57
Illinois	7,117	12,198	58
Indiana	2,330	4,137	56
Iowa	1,581	3,084	51
Kansas	1,147	2,079	55
Kentucky	1,146	2,761	42
Louisiana	1,249	2,464	51
Maine	526	992	53
Maryland	1,654	2,988	55
Massachusetts	4,503	7,869	57
Michigan	3,791	6,362	60
Minnesota	2,203	3,577	62
Mississippi	567	1,497	38
Missouri	2,625	5,297	50
Montana	393	557	71
Nebraska	829	1,635	51
Nevada	101	167	60
New Hampshire	393	656	60
New Jersey	4,624	5,813	80
New Mexico	234	439	53
New York	16,046	27,396	59
North Carolina	1,470	2,749	54
North Dakota	297	518	57
Ohio	5,237	9,218	56
Oklahoma	936	2,552	60
Oregon	779	1,461	53
Pennsylvania	8,281	13,529	61
Rhode Island	545	961	57
South Carolina	708	1,402	50
South Dakota	256	508	50
Tennessee	1,247	2,908	43
Texas	3,132	6,868	45
Utah	313	575	54
Vermont	259	523	50
Virginia	1,659	2,869	57
Washington	1,364	2,280	60
West Virginia	907	1,814	49
Wisconsin	1,946	3,525	55
Wyoming	162	274	59

* This table gives the number of physicians (based on the Sixteenth Edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army, Navy and Public Health Service are not included.

The war continues to interfere seriously with the receipt of medical periodicals from foreign countries, but through cooperation with the American Library Association it is probable that interchange of scientific publications will be facilitated, which will add to the material utilized in the Current Medical Literature department of The Journal. Arrangements have been made to cooperate with governmental agencies in promoting the interchange of scientific work with the Latin American countries.

Material published in the Organization Section of The Journal has proved to be of the utmost importance in guiding the development of plans for wider distribution of medical service and hospitalization.

The net paid weekly average circulation of The Journal in 1941 was 100,027, and the total number of copies printed was 5,350,113.

Special Journals

The special journals published by the Association have been continued with the scientific and editorial standards that have made them leaders in their field.

Because of conditions created by the national defense effort it was thought to be the part of wisdom to reduce the size of the special journals to some extent, so that the amount of scientific material which appeared in the pages of these publications was considerably less in the year covered by this report than in the preceding year and probably will continue to be less.

The special symposiums featured in the ARCHIVES OF SURGERY, which have concerned the abdomen and the bones and joints, have attracted much favorable attention. Also of significance have been the collective reviews which constitute one of the most important features of the ARCHIVES OF INTERNAL MEDICINE. Repeated requests have been received for reprints of these collective reviews.

The total number of subscribers to the special journals, not including WAR MEDICINE, in 1941 was 26,740 as compared with 26,356 in 1940. Two of the periodicals in this group showed a loss in the number of subscribers, these being the ARCHIVES OF SURGERY and the AMERICAN JOURNAL OF DISEASES OF CHILDREN, while each of the other special journals showed an increase.

Two of the special journals, namely the AMERICAN JOURNAL OF DISEASES OF CHILDREN and the ARCHIVES OF OPHTHALMOLOGY, showed an excess in income received over the cost of publication in 1941 as they did in 1940, the gain this year being considerably above that of last year. The ARCHIVES OF SURGERY showed a gain in 1941 of $436.73 as against a loss in the preceding year of approximately $6,750. The total loss incurred in the publication of the special journals in 1941, including that incident to the publication of the new journal, WAR MEDICINE, was less than the loss sustained in the preceding year by the sum of $18,482.24.

War Medicine

WAR MEDICINE, established in January 1941, has been recognized as significant by the Army and Navy medical departments and by the United States Public Health Service. It has published material dealing with every aspect of the war effort.

The Division of Medical Sciences of the National Research Council indicated recently the desirability of making this a monthly publication. However, complicating factors from the point of view of publication have temporarily delayed such action.

The abstracts in WAR MEDICINE have been an especially useful contribution and are being widely reprinted in British and Canadian publications. Incidentally, all this material is made available, in advance of publication, to the Medical Research Council of Great Britain.

WAR MEDICINE is now widely recognized as a notable contribution of the American Medical Association toward national defense.

The cost of publication of this periodical during its first year was slightly in excess of income received.

Hygeia

Constant effort has been made to effect improvements in the quality of material appearing in the columns of HYGEIA and to publish articles and editorials of timely interest, authentically informative in character. There seems to be no doubt that the reader interest in this magazine has definitely increased. A considerable number of articles originally published in HYGEIA have been reprinted in the *Reader's Digest*, a publication with a large circulation, and articles and editorials have been widely quoted in lay publications throughout the country.

The average monthly circulation of HYGEIA was well maintained during the year covered by this report, having been in excess of 100,000 copies. There was an increase in the percentage of subscription renewals as compared with the previous year.

The fine support of the Woman's Auxiliary has played an important part in introducing HYGEIA to new readers and in making it available to public and semipublic institutions in various communities. Through the efforts of the auxiliaries, HYGEIA has been placed in a considerable number of schools and hospitals and in reading rooms of women's clubs and other organizations. Most highly commendable was the effort of the Woman's Auxiliary to the Medical Society of the State of Pennsylvania, which resulted in placing HYGEIA in every junior and senior high school in that state.

The advertising income of HYGEIA was in some instances unfavorably affected by the prevailing uncertainties in business and industry. Some advertising contracts were canceled and in some instances the amount of space used by advertisers was reduced, but these losses were more than met by the amount of new advertising secured.

Total income received from all sources for the fiscal year covered by this report was $266,172.38, while total expenditures for the same period amounted to $250,434.32. It is gratifying to report that for the first time in several years HYGEIA credits were greater than debits, in the sum of $15,738.06.

An actual count made in December 1941 showed that the total number of subscribers at the time the count was made was 114,000, distributed among 15,543 physicians and 98,457 others.

Summary

Constant effort was made during the year covered by this report to improve the quality of material appearing in Hygeia, and reader interest definitely increased. Articles and editorials from the columns of this magazine have been widely quoted and reprinted in lay publications. The Woman's Auxiliary to the American Medical Association and its state auxiliaries have continued their fine work in introducing Hygeia to new readers and in placing the magazine in schools, hospitals and reading rooms of many organizations.

The average monthly circulation during 1941 was in excess of 100,000 copies, and there was an increase in the percentage of subscription renewals. The total number of subscribers by actual count in December 1941 was 114,000, distributed among 15,543 physicians and 98,457 others.

While advertising income in some instances was curtailed, the loss thus incurred was more than met by new advertising secured. For the first time in a number of years credits exceeded debits, by the sum of $15,738.06 for the year 1940.

Press Relations

The effectiveness of the press relations activities of the Association, carried on under the supervision of the Editor of THE JOURNAL, is testified to in numerous unsolicited comments by disinterested persons.

Under the heading "A. M. A. Press Releases" the world famed daily newspaper *Greenwich Time*, in an editorial in its issue of April 21, 1941, declared that "Whatever may be the faults of the American Medical Association . . . it has an excellent public relations department. From Chicago come frequent and readable stories of the progress of medicine, which let us know that each succeeding time we get sick we've got a better chance of getting well. . . ."

In a recent letter to the Editor of THE JOURNAL the managing editor of the Miami (Fla.) *Herald* made the following unsolicited statement: "I should like to take this occasion also to tell you how valuable I have found the American Medical Association news releases to be. Such material as we have used always has found a healthy reader response. . . ."

Despite the space limitations in newspapers because of the exigencies of war, the number of stories based on articles appearing in THE JOURNAL and in HYGEIA which were used in American newspapers in 1941 exceeded that of 1940. During the past year more than eighty-one thousand such stories were published in the daily press of the United States in addition to a large number of feature stories and editorials based on information published or furnished by the Association. Of particular importance among the developments of 1941 was the large increase in the number of weekly newspapers using stories based on releases furnished by the Association. Newspaper stories and radio announcements are based on information released weekly through the AMERICAN MEDICAL ASSOCIATION NEWS, which contains abstracts of articles and announcements appearing in the various periodicals of the Association. In 1941 special editions of the AMERICAN MEDICAL ASSOCIATION NEWS were inaugurated containing abstracts of articles and announcements appearing in WAR MEDICINE. The same mailing list is used for the regular and the special editions of the AMERICAN MEDICAL ASSOCIATION NEWS and includes three hundred and twenty-five daily newspapers, eighty-two news services, radio stations and miscellaneous publications, forty-three local and state health departments, fifty health and tuberculosis associations, seventy-seven county and local medical societies, fifty-three state and territorial medical societies, eighty-four national medical organizations, sixty-one pharmaceutic associations and manufacturing companies, forty-six industrial organizations, nineteen educational institutions and twenty-four science writers. In addition, eighty copies are sent weekly to various constituent state and territorial medical associations for distribution to smaller newspapers in their states. All names on the mailing list have been placed there by request. Particularly noteworthy, in view of the necessity of exercising rigid economy in publication costs as related both to materials and to other expense, is the fact that more than three thousand more newspaper stories based on articles in the AMERICAN MEDICAL ASSOCIATION NEWS were used in 1941 than in 1940 without any increase in the number of copies of the AMERICAN MEDICAL ASSOCIATION NEWS that were distributed.

The soundness of the press relations program of the Association was demonstrated again during the Ninety-Second Annual Session in Cleveland. During the five days of the session the three Cleveland daily newspapers devoted a total of 1,737 inches of space to the session as compared with 1,573½ inches of space in the eight major New York City newspapers during the 1940 session.

During 1941 the number of inquiries regarding the various phases of medicine received from newspapers and radio stations was in excess of three thousand one hundred as compared with approximately two thousand in 1940. A considerable portion of this increase is due to inquiries pertaining to various medical phases of the war and is in itself evidence of the wide acceptance of the Association as an authoritative source of information on medical matters.

Other activities of the press relations department have expanded considerably, especially with regard to the furnishing of articles and information for use in special publications such as industrial house organs and medical supplements published by local newspapers under the sponsorship of medical societies. The number of special newspaper supplements aided by the department in 1941 totaled twenty-two as compared to twenty-one in 1940 and fifteen in 1939.

The facilities of this department have been utilized extensively by the American Red Cross and by governmental agencies. The press facilities for such meetings as the Association's Annual Congress on Medical Education and Licensure and the Annual Congress on Industrial Health have been handled by this department, and special assistance has been given to several state and county medical societies in their press relation programs. The material for the Medical News page appearing in HYGEIA each month also is furnished by the press relations department.

In addition to the releases contained in the regular and special editions of the AMERICAN MEDICAL ASSOCIATION NEWS, numerous special releases have been issued during the year pertaining to such matters as contaminated drugs and other information which it was deemed necessary to bring to the immediate attention of the public.

Library

The Library of the American Medical Association during 1941 continued to be of service in every possible way to the various councils, bureaus and departments in the headquarters offices, to governmental agencies, to state and county medical societies and other professional organizations and to individual physicians from all parts of the country.

In 1941, 2,806 package libraries were distributed in response to requests received from every state and the District of Columbia, the Canal Zone, Hawaii and Mexico. The package library service, principally because of the excessive mailing costs, has not heretofore been made available to physicians residing outside the continental United States and Canada. Two hundred governmental agencies, including army medical posts, marine hospitals and naval training stations, were accommodated through the package library service. Sulfanilamide, industrial diseases, anesthesia, vitamins, tuberculosis, war and national defense problems and aviation medicine were among the subjects most frequently requested.

The Library maintains a periodical lending service, and 12,833 periodicals were lent in 1941 in response to requests received from physicians in all parts of the United States as well as from a number of military and governmental agencies.

Approximately 6,650 reference questions were answered by the Library in 1941 as compared with approximately 5,550 similar questions answered in the preceding year. While most of the reference questions are answered by mail, more than 1,200 visitors called in person for Library service.

Indexes for THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION were prepared in the Library during the year as usual, and in addition much work has been done on the preparation of an index for the new edition of the Standard Classified Nomenclature of Disease.

The Library retains the medical periodicals which it receives for a period of ten years, and each year those discarded are offered to various medical libraries through the Exchange Service of the Medical Library Association. In 1941 periodicals published in 1929 were distributed to fifty-five medical libraries.

Employees of the Association who took advantage of the opportunity to read the books and magazines made available through the Employees' Library for an annual fee of 50 cents numbered 117 in 1941.

QUARTERLY CUMULATIVE INDEX MEDICUS

The material available for indexing for the QUARTERLY CUMULATIVE INDEX MEDICUS was somewhat curtailed in 1941. Periodicals were received from abroad quite regularly until June 1941, but since that time no periodicals have been received from Germany, France or Italy. Several hundred issues were borrowed from a Chicago library which had been fortunate enough to receive them. Through the efforts of the Joint Committee on Importations of the American Library Association, many foreign periodicals now held in Bermuda that are addressed to scientific libraries in the United States will soon be released and the issues thus secured will be indexed in the 1942 editions of the QUARTERLY CUMULATIVE INDEX MEDICUS. Since all exchange relations with periodicals published in Germany, France, Italy, Japan, the Philippines, China, Belgium, Rumania, the Netherlands, Finland, Norway and Denmark have been canceled, much foreign literature will be unavailable in 1942. The effect that war conditions have had on the QUARTERLY CUMULATIVE INDEX MEDICUS is indicated by the fact that the total number of articles indexed from periodicals published in foreign languages for inclusion in the INDEX was 26,614 in 1940

and 24,312 in 1941. It is anticipated, however, that the INDEX will be much more affected in 1942.

There were seventy-six fewer subscribers to the QUARTERLY CUMULATIVE INDEX MEDICUS in 1941 than in the preceding year, but the loss incurred in its publication was less than in 1940 by the sum of $5,388.12.

Summary

The Library of the American Medical Association has continued to be of service in every possible way to the various councils, bureaus and departments in the headquarters offices, to governmental agencies, to state and county medical societies and other professional organizations and to individual physicians from all parts of the country.

In 1941, 2,806 package libraries were distributed to all sections of the United States and, for the first time since this service was inaugurated, to the Canal Zone, Hawaii and Mexico. During the year covered by this report, 12,833 periodicals were lent by the Library, approximately 6,650 reference questions were answered, more than 1,200 visitors who called in person for Library service were accommodated, books and magazines were circulated through the Employees' Library to 117 employees of the Association, and indexes for The Journal and the new edition of Standard Classified Nomenclature of Disease were prepared.

War conditions have had an unfavorable effect on the amount of material available for indexing in the Quarterly Cumulative Index Medicus. No periodicals have been received in the Library from Germany, France or Italy since June 1941, and all exchange relations with periodicals published in Germany, France, Italy, Japan, the Philippines, China, Belgium, Rumania, the Netherlands, Finland, Norway and Denmark have been canceled so that much foreign literature will be unavailable and the Index more seriously affected in 1942. Although there were fewer subscribers to the Quarterly Cumulative Index Medicus during the past year, the loss incurred in its publication was less in 1941 than in 1940 by the sum of $5,388.12.

American Medical Directory

As of Dec. 31, 1941, 7,279 copies of the Sixteenth Edition of the American Medical Directory had been sold, as compared with the total sale of 7,315 copies of the Fifteenth Edition. As this report is being prepared, it seems probable that the total sales of the Sixteenth Edition will equal and possibly may slightly exceed those of the Fifteenth Edition.

The publication of the American Medical Directory involves a tremendous amount of effort on the part of the Biographic Department. It is essential that the files of the Biographic Department shall be maintained to the highest possible degree of accuracy and that the information contained in these files shall be kept up to date. There can be no let-up in the work incident to the preparation and compilation of material to be published in new issues of the Directory. Preparations for the actual publication of the Seventeenth Edition of the American Medical Directory were begun in July 1941. The general make-up of this new edition will be similar to previous editions except that an effort will be made to list the names of physicians who have been called to active duty with the military forces in a manner to indicate that they are serving as medical officers. It will be necessary to use the home addresses of such physicians, since it will not be possible or desirable to publish their present addresses. The names of commissioned medical officers of the United States Navy, together with biographic data, will appear in alphabetical arrangement under the general address of Washington, D. C., with local addresses "Navy Department." Because of the great difficulties occasioned by the unusual and extremely large number of changes of address of physicians and because of the difficulty of maintaining necessary office personnel, there will be unavoidable delay in the issuance of the new Directory, which probably will appear about the first of July rather than in April or May as in previous years.

Advance subscriptions for the Seventeenth Edition of the American Medical Directory received as of Dec. 31, 1941 numbered 3,840, slightly less than the number of orders received at a corresponding time for the Sixteenth Edition.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau served thirty-four of the official publications of constituent state medical associations during most of 1941. In September 1941 the Hawaii Territorial Medical Association established the *Hawaii Medical Journal*, which became the thirty-fifth member of the group of medical journals served by this bureau.

Commissions earned by the Bureau during the year ended Dec. 31, 1941 amounted to $39,309.41. The expense incident to the operation of the Bureau was $16,381.12. The cash discounts allowed in excess of cash discounts received amounted to $1,928.29. Commissions remitted to state journals at the end of the year amounted to $21,000. Such remittances are made in proportion to the total amount of advertising secured for each of the cooperating journals.

Mailing and Order Department

In 1941 the total number of pieces of outgoing mail of first and third classes handled through the mailing department, exclusive of copies of publications sent to subscribers, was 2,582,248. More than 635,000 pieces of first class metered mail went out from the Association's office in 1941, while an undetermined but large number of pieces of first class mail were sent out but not handled through the Mailing Department.

The Order Department in 1941 handled 72,017 orders involving the distribution of 404,042 items. More than 6,500 mail bags were used for the mailing of material which passed through this department.

Division of Drugs, Foods and Physical Therapy

On Jan. 14, 1941 the Division of Drugs, Foods and Physical Therapy lost the able leadership of its Director, Dr. Paul Nicholas Leech. Dr. Franklin C. Bing, Secretary of the Council on Foods and Nutrition, served as acting director until July 1, 1941, when Dr. Theodore G. Klumpp assumed the positions left vacant by Dr. Leech's untimely death.

Steps were taken during the year to bring the rules and policies of the three councils which comprise the Division into closer apposition, particularly those relating to testimonial advertising, and it is expected that a uniform statement of attitude will be adopted.

The Council on Pharmacy and Chemistry and the Council on Physical Therapy completed together a study of ion transfer in connection with the consideration of acetyl-beta-methylcholine, and a report was published in THE JOURNAL on Aug. 2, 1941.

The Cooperative Committee on Vitamins has been a valuable influence in coordinating and crystallizing the views of all three councils with respect to the many questions on vitamin therapy that have arisen.

Dr. Klumpp resigned as Director of the Division of Drugs, Foods and Physical Therapy and Secretary of the Council on Pharmacy and Chemistry in January 1942, and, pending other arrangements, the Board of Trustees has authorized the suspension of the Division.

COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry has continued its work of keeping the medical profession informed of new medicinal products and of promoting in all possible ways the development and progress of rational drug therapy. The Council's work has never been of greater importance than it is at the present time. While the Food, Drug and Cosmetic Act has been a beneficent influence in protecting the public and the medical profession from fraud and deception, it is highly important that there exist in the profession of medicine an organization qualified to express and crystallize the views of medical experts concerning the standards, actions, indications and dangers of drugs. This is a function which governmental agencies cannot adequately perform unassisted. Once the profession has made its own determination of the scientific facts

and has established a consensus, governmental agencies are then in position to invoke the machinery of law to implement the facts. The function of the Council on Pharmacy and Chemistry is primarily fact finding and educational, and it is altogether a wholesome thing that it should be exercised by an independent, professional group separate and apart from the function of law enforcement.

RELATIONS WITH GOVERNMENT AUTHORITIES

As an authoritative group in drug matters, the contacts of the Council with the Federal Food and Drug Administration, the Federal Trade Commission, the armed forces, the Office of Production Management and the United States Pharmacopeia and National Formulary groups have assumed ever increasing importance. The relations between the Council and these governmental groups have been maintained on the highest plane of service for the common good. In accord with its time honored policy, the Council has given every assistance within its power to the representatives of the government. It is gratifying to note that there were, during the past year, a greatly increased number of calls on the office of the Council from these sources for facts, information and other assistance. The Council takes pride in the contribution to the war effort which it has thus been able to make. It is also a pleasure to acknowledge that the Council has been able to increase its measure of usefulness to the profession and to the public through the facts and information made available to it by governmental agencies, particularly the Federal Food and Drug Administration.

In other ways the work of the Council has received added recognition during the year covered by this report. The state of New Hampshire by legislative enactment recognized New and Nonofficial Remedies as an authoritative compendium of drugs, along with the United States Pharmacopeia and the National Formulary. It is understood that New and Nonofficial Remedies is employed as a guide by the medical departments and purchasing agencies of the armed forces in determining whether or not drugs under consideration have obtained the recognition and acceptance of the medical profession.

WORK OF THE COUNCIL

In the field of new drugs the Council again has been concerned with the new developments in therapy with the sulfonamide drugs and the further rapid developments in the vitamin field. The only members of the sulfonamide group of which brands have not yet been accepted by the Council are sulfaguanidine and sulfadiazine. Consideration of brands of these drugs is proceeding favorably. Much of the Council's time has been taken up with consideration of brands of sulfapyridine, sulfathiazole and sulfanilamide. Through its scrutiny of promotional material and advertising copy, the Council has been highly successful in restricting the claims advanced for these important drugs to those which have been supported by adequate scientific evidence.

In addition to routine acceptance of brands of various already accepted vitamins the Council has accepted, during the year, pyridoxine hydrochloride and menadione. The former was accepted for investigational purposes only, and tests and standards for both have been elaborated. The Council also accepted a vitamin D_2 preparation marketed under the proprietary name "Drisdol."

Other important new products accepted by the Council during the current year are Acetyl-Beta-Methylcholine with the proprietary brand Mecholyl Chloride; Adrenal Cortex Extract; the new anesthetics Cyclopropane and Amylcaine Hydrochloride; Aluminum Hydroxide Gel with the proprietary brand Creamalin, and the various Phenylmercuric Compounds—Merphenyl Nitrate (Basic), Merphenyl Picrate Tincture and Merphenyl Borate Tincture.

The Council has kept pace with the latest developments in serum therapy by accepting Normal Human Serum and Normal Human Plasma with various marketed brands, as well as Antipneumococcic Rabbit Serum Types 3 and 14. The Council is sponsoring investigations in connection with the consideration of other higher type Antipneumococcic Serums.

NOMENCLATURE

Because of new developments the Council has of recent years been much concerned with matters of nomenclature. During the past year the Council adopted the nonproprietary term "Menadione" for the substance 2-methyl-1, 4-naphthoquinone, a synthetic vitamin K preparation. This term was subsequently adopted by the Revision Committee of the United States Pharmacopeia. The Council adopted the nonproprietary term "Diethylstillbestrol" for the diethyl derivative 4:4'-dihydroxy alpha:beta-dicthylstilbene. This term has also been adopted by the Pharmacopeia Revision Committee. A system of nomenclature for noncrystalline estrogenic preparations was considered, and the term adopted is Solution of Estrogens or Solution of Estrogenic Substances. Forms other than solutions will use an appropriate term, such as Suppositories of Estrogens or Estrogenic Substances, and Tablets of Estrogens. These terms, of course, are all nonproprietary. The designation "Phenytoin Sodium" was adopted as the nonproprietary name for sodium diphenyl hydantoinate. In the sulfonamide field the Council adopted the terms Sulfadiazine and Sulfaguanidine as nonproprietary designations for 2-sulfanilamidopyrimidine and sulfanilylguanidine respectively. At the instigation of the Council the United States Pharmacopeia Revision Committee adopted the terms "Isotonic Solution of Sodium Chloride" and "Isotonic Solution of Three Chlorides" to replace "Physiological Solution of Sodium Chloride" and "Physiological Solution of Triple Chlorides" respectively.

It should be emphasized that the work of the Council in drug nomenclature is exceedingly valuable in the prevention of confusion of terminology. In this field the Council works in close cooperation with the Nomenclature Committee of the American Chemical Society and other organizations having an influence on drug nomenclature. It gives all due consideration to the wishes of the discoverers of products which are to be named, urging, however, that any taint of therapeutic suggestion be avoided.

RULE 11 OF THE COUNCIL

Another function of the Council on Pharmacy and Chemistry which has received emphasis in the past few years is the consideration of the status of the firms under the Council's Rule 11, which is designed to prevent acceptance of products marketed by firms whose policies are in conflict with the principles of rational and scientific medicine. Since decisions in this matter must naturally be based on a judgment of the influence on rational therapeutics of a firm's policies and practices, every effort is made to provide objective criteria as a guide. At its meeting in October 1941 the Council considered an outline of objective standards, and it is anticipated that the use of this outline will greatly facilitate and expedite the considerations. If a firm is found satisfactory with regard to Rule 11, the Council proceeds to acceptance or rejection of submitted products, descriptions of which appear in THE JOURNAL.

PUBLICATIONS OF THE COUNCIL

New and Nonofficial Remedies.—Of outstanding importance was the adoption by the Council during 1941 of a proposal for the revision of the format of New and Nonofficial Remedies. This proposal provides for a more logical arrangement of drug groups into revised chapters, and the elimination of redundant printed material. As far as possible these changes will make their first appearance in the 1942 edition of New and Nonofficial Remedies. More than five thousand five hundred copies of New and Nonofficial Remedies were distributed during the year to physicians, manufacturers of pharmaceutic products, pharmacologists, governmental institutions and teachers. A similar amount in paper bound copies was supplied to the classes in pharmacology of recognized medical schools.

Epitome of the U. S. Pharmacopeia and National Formulary.—More than three thousand copies of the latest edition of the Epitome were distributed during 1941. It is popular with both pharmacists and physicians. A new edition will be prepared as soon as the next revisions of the Pharmacopeia and the National Formulary are released.

Useful Drugs.—Over four thousand, seven hundred and fifty copies of Useful Drugs were distributed during 1941 among practitioners and medical students, who are the principal users of this publication. The next revised edition is due in 1942.

American Medical Association Interns' Manual.—During the past year one thousand, one hundred and twenty copies of the

American Medical Association Interns' Manual were disposed of and at present a new edition is being prepared. The distribution of this volume has fallen off to some extent; it is believed that this is due largely to the fact that the text is in need of extensive revision to bring it up to date. The demand for the Manual since its introduction indicates that interns find this to be a very useful handbook.

Glandular Physiology and Therapy.—The new series of articles on the endocrines which has appeared serially in THE JOURNAL over the past year has now been collected in book form. This volume will detail the recent advances made in endocrinology almost up to the time of printing, as the articles themselves were revised before binding. This new edition should be of unusual value to practitioners, since it correlates the basic physiologic principles and the application of these to the practice of medicine.

REPORTS OF THE COUNCIL

The Council's reports of all kinds, with few exceptions, are first published in THE JOURNAL and later collected into a volume, The Annual Reprint of the Reports of the Council on Pharmacy and Chemistry. Reports fall roughly into the following groups: reports of omission or rejection, preliminary reports on products not yet ready for acceptance, and status reports on drugs or on various therapeutic or pharmacologic problems.

The Council during the year reconsidered the report on Bacteriophage Therapy by Drs. Krueger and Scribner, which supplements the previous reports of Drs. Eaton and Bayne-Jones, and, as a result of the restudy of the problem, the authors and the Council concluded that the accumulated clinical data are in some instances highly suggestive and warrant the continuation of further studies under thoroughly controlled conditions. Another question reconsidered was the dangers of Cinchophen and Neocinchophen. This restudy confirmed the Council's previously expressed opinion that these drugs should not be employed unless the attending physician feels that the patient's need fully justifies the demonstrated risk in using them.

During the year the Council gave consideration to various human convalescent serums and has accepted Human Convalescent Measles Serum and Human Convalescent Scarlet Fever Serum but feels that the evidence does not yet warrant the acceptance of Human Convalescent Poliomyelitis Serum and Human Convalescent Mumps Serum. A preliminary report on the status of these serums has been issued.

The Council gave extended consideration to the dangers of preparations containing petrolatum and vegetable oils as vehicles intended for introduction into the nasal cavity, a subject on which a report has already been published in THE JOURNAL, and a further report submitted for publication. In harmony with the attitude reflected in the report, the Council voted to eliminate from New and Nonofficial Remedies all nose drops and nasal sprays containing petrolatum. The evidence concerning the danger of nasal preparations containing vegetable oils was not considered sufficiently persuasive at the present time to warrant similar action. The Council similarly gave consideration to the use of halogenated vegetable oils for bronchography and issued a report.

In connection with the published acceptance of Human Blood Plasma and Serum, the Council issued a comprehensive report on the present status of these therapeutic agents, the value of which is being especially demonstrated under war conditions.

The Council sponsored a report prepared by Dr. M. L. Tainter on the Sympathomimetic Amines as Epinephrine Substitutes. This report is a valuable comparative study of these widely used drugs. It calls attention to several unsolved problems of their use and especially to the danger of addiction from amphetamine sulfate.

In the field of endocrinology the Council issued a preliminary report on Progesterone and the Status of Corpus Luteum Hormones Therapy. The Council decided that the time had not yet come to accept any preparation of progesterone and in another report definitely rejected a so-called "oral progesterone," pregneninolone.

MEMBERS OF THE COUNCIL

During the year Dr. James P. Leake was elected to membership on the Council, succeeding the late Dr. C. W. Edmunds. Drs. Rose, Sollmann and Sevringhaus, whose terms of membership expired during the year, were elected to succeed themselves.

Following the resignation of Dr. Theodore G. Klumpp as Secretary of the Council on Pharmacy and Chemistry in January 1942, Dr. Austin E. Smith, for some years a member of the Council's staff, was made Acting Secretary of the Council.

Aside from the exigencies created by the fact that our country is at war, the Council on Pharmacy and Chemistry faces a more than usually arduous year. Too much credit cannot be given to the efforts of the members of the Council whose only remuneration for the sometimes onerous burden of work is the realization of service to the cause of rational medicine, which is epitomized in the Council's motto "Non Sibi Sed Medicinae." In this connection credit should be given to numerous consultants who have generously given their service to the Council in the consideration of questions relevant to their special fields of knowledge. A list of these consultants is published in each annual issue of New and Nonofficial Remedies.

Summary

The Council on Pharmacy and Chemistry has continued fruitful and satisfactory relations with various governmental agencies.

In the field of new drugs the Council has again been concerned with the new developments in therapy with the sulfonamide drugs and the further rapid developments in the vitamin field. More than usual attention has been given to matters of nomenclature, mainly because of the rapid development of new drugs. The main effort of the Council in this regard is to avoid the confusion caused by multiple names for the same drug and the evils of therapeutically suggestive names.

Publications of the Council have continued to enjoy satisfactory distribution. A new edition of the book "Glandular Physiology and Therapy" is in the process of preparation, and a radical revision of the format of New and Nonofficial Remedies is being made for the 1942 edition.

The Council has issued many important reports during the year, among the most important of which are those on bacteriophage therapy, the dangers of Cinchophen and Neocinchophen, various human convalescent serums, preparations containing petrolatum and vegetable oils for nasal inhalations and halogenated vegetable oils for bronchography, human blood plasma and serum, the sympathomimetic amines as epinephrine substitutes and the status of corpus luteum hormones therapy.

During the year the Council lost its Secretary, the late Dr. Paul Nicholas Leech, and a member of long standing, the late Dr. C. W. Edmunds.

COUNCIL ON PHYSICAL THERAPY

The Council on Physical Therapy has continued its duties of investigating and reporting on new apparatus offered to the profession for diagnostic and therapeutic purposes, publishing informative articles on reliable and effective physical therapeutic measures and advising research workers in the field. Emphasis has recently been placed on the publication of material considered valuable to those members of the profession engaged in the nation's war effort.

PUBLICATIONS OF THE COUNCIL

The Handbook on Amputations, recently published, contains practical information on the general principles governing all kinds of amputation, sites of election, physical therapy in amputations and mechanics of artificial limbs. The volume has already found favor with the profession. Over a period of three years the Consultants on Artificial Limbs have devoted considerable time and effort to reviewing the literature, gathering facts and opinions and assembling the material in short, concise articles which were first published in THE JOURNAL. Since this group of consultants was composed of leading orthopedic surgeons and of representatives of the Association of Limb Manufacturers of America, the Handbook is a reliable guide for physicians desiring the latest information on technic of amputation and on the most satisfactory prosthesis. The Council is indebted to the consultants for their untiring efforts.

A Manual on Physical Therapy, the contents of which have been published in WAR MEDICINE and have been collected in a small handbook, is ready for distribution. It is a short, concise summary of the pertinent facts pertaining to the therapeutic value of physical agents. The Council believes that it will be useful to medical officers in the Army and Navy and to physicians engaged in civilian defense work as well as to the general practitioner. The Subcommittee on Physical Therapy of the National Research Council cooperated in the preparation of this volume.

Apparatus Accepted, a Council publication containing a list of accepted products, has been revised, and copies are available on request to the secretary of the Council.

Articles and reports published under the auspices of the Council included "X-Ray Protection" by Lauriston S. Taylor, Ph.D., "Radiotherapy for Inflammatory Conditions" by A. U. Desjardins, M.D., "Corsets and Backache" by Frank R. Ober, M.D., "The Management of the Cerebral Palsies" by Winthrop M. Phelps, M.D., "Explosion Hazard in Anesthesia," "Interrelationships of the Artificial Limb Manufacturer, the Surgeon and the Patient," "Physical Therapy in Amputations," "Amputation in Congenital and Chronic Disabilities," "Reamputations and Secondary Amputations," "Ion Transfer," "Amputations in Diabetes Mellitus and Peripheral Vascular Disease," "Rehabilitation" and "The Manufacture of Artificial Limbs.

RESEARCH

Grants were awarded through the Council's Committee on Research in aid of research on the following subjects:

A functional examination of respiration in obstructive diseases.
A continuous record of the total daily amount of ultraviolet radiation of wavelengths 3,200 angstroms and shorter from the sun and the entire sky incident on a horizontal surface, in clear and cloudy weather, as function of the season and the geographic latitude.
A survey of methods used in artificial respiration.
Studies of the physiologic effects of short wave diathermy.
An experimental study of the amplification afforded by hearing aids under conditions of actual usage.
Further research on anesthesia by means of refrigeration in surgery of the extremities.
Further development of method and portable apparatus for clinical determination of blood flow in the arm or leg.

Previous grants have yielded very gratifying results in basic scientific research.

ARTIFICIAL RESPIRATION

Research in the field of artificial respiration, both manual and mechanical, is being continued. The survey of methods used in resuscitating the asphyxiated individual has been prosecuted for two years, and the Council expects to continue it for at least five years.

The investigation and acceptance by the Council on Physical Therapy of apparatus for administering artificial respiration does not constitute a recommendation to abandon manual artificial respiration. In emergency cases, especially those occurring outside medical institutions, apparatus whether inhalator or resuscitator is seldom if ever at the site of the accident. A period of ten minutes to half an hour or perhaps longer elapses before an apparatus arrives. It is of paramount importance that artificial respiration be instituted immediately, and the public should be given instruction on how to administer approved methods of manual artificial respiration such as are described in the American Red Cross First Aid Textbook.

The Consultants on Respirators have aided the Council in its investigation of equipment used to provide artificial respiration over long periods of time such as for patients having poliomyelitis. When an epidemic of poliomyelitis strikes a community, the medical and hospital facilities especially with regard to respirators may be inadequate, and in an effort to relieve this situation to some degree the Council reviewed and adopted specifications for the construction of a homemade respirator. Reprints of "A Simple Workable Respirator" are now available. The homemade device is suggested for emergency purposes only. The more rugged commercially available equipment is recommended for prolonged treatment.

ULTRAVIOLET RADIATION

For several years the Council on Physical Therapy has given consideration to ultraviolet generators designed for germicidal purposes. Studies have been made of the effect of these lamps in schoolrooms, hospital operating rooms and nursery cubicles. Available critical evidence indicates that the ultraviolet radiation from these lamps will destroy bacteria, provided the air borne germs come within direct range of the lethal ultraviolet rays. Bacteria lurking in the shadows or under opaque objects will not be affected; in fact, thin films of grease, oil and other organic and inorganic matter, even though transparent, will protect the bacteria from destruction. Cross infection may be eliminated only under certain conditions. For example, babies surrounded by mechanical barriers and "curtains" of ultraviolet radiation may be protected from cross infection, provided care is exercised to avoid contamination by some other means such as careless nursing practice. The Council's report "Requirements for Ultraviolet Lamps for Disinfecting Purposes" contains further information on this subject.

RADIO INTERFERENCE

The Council has continued its cooperation with the Federal Communications Commission in an effort to solve the problem of radio interference caused by diathermy apparatus. Three frequency channels, 13,665, 27,330 and 40,995 kilocycles per second, have been tentatively assigned, although the tolerances of these frequency channels have not been fixed.

AUDIOMETERS AND HEARING AIDS

Work on an acceptable procedure for estimating percentage loss of hearing has progressed, and the Council in cooperation with its Consultants on Audiometers and Hearing Aids expects to make a definite report in the near future. Careful investigations have been made of the various hearing aids and audiometers on the market, and reports have been published.

EDUCATION

The Consultants on Education, under the supervision of the Council, have contributed an important service in the dissemination of reliable information on the true values of physical therapy in the practice of medicine. It is gratifying to note that several schools of medicine which formerly had no undergraduate courses in physical therapy now include courses in their curriculums as a result of the efforts of the Council on Physical Therapy.

EXHIBITS

The Exhibit on Lame Backs was repeated at the Cleveland session in 1941 and was very successful. It will be presented again in 1942 with additional material. The Council provided exhibits during the year at the meetings of the American Academy of Ophthalmology and Otolaryngology and the American Congress of Physical Therapy.

INVESTIGATIONS AND REPORTS

The Council has continued its investigation of physical therapy apparatus and has published reports of forty-five acceptances and of nine rejections. Most members of the medical profession probably are not fully aware of the tremendous amount of material consisting of reports, articles, advertising and correspondence which the members of the Council are obliged to review during the year. The members of the Council on Physical Therapy receive no remuneration for their services but give freely of their time and energy.

Cordial cooperation has been maintained with the National Bureau of Standards, the American Standards Association, the Food and Drug Administration and the Federal Trade Commission.

Summary

The Council on Physical Therapy has continued its work of investigating apparatus offered for diagnostic and therapeutic purposes and reporting its decisions in The Journal.

During the year the Handbook on Amputations, the Manual on Physical Therapy and numerous articles on physical therapy were edited and published, and Apparatus Accepted was revised.

Several grants in aid of research have been made. Research in the field of artificial respiration is being continued and expanded. Specifications for ultraviolet lamps designed for disinfecting purposes have been compiled and adopted.

Cooperation has been maintained with the Federal Communications Commission in an effort to solve the problem of radio interference caused by diathermy apparatus.

Work has progressed on an acceptable procedure for estimating percentage loss of hearing. Hearing aids and audiometers have been investigated and reports published.

Through the efforts of the Council's Consultants on Education, courses in physical therapy have been included in the curriculums of several schools of medicine that were without undergraduate physical therapy instruction.

Exhibits on physical therapy were presented at two medical meetings.

Forty-five acceptance reports and nine reports of rejection have been published, while many more pieces of apparatus have been investigated.

Correspondence relating to physical therapy apparatus has become a major part of the Council's work.

COUNCIL ON FOODS AND NUTRITION

The Council on Foods and Nutrition has continued in every possible way its policy of cooperation with governmental agencies in matters that come within the scope of the Council, and the facilities of the Council will no doubt be utilized to an ever increasing extent as the war continues.

Members of the Council have served on a number of important advisory committees to government agencies, especially the Food and Nutrition Board of the National Research Council. The recommended daily allowances formulated and adopted by the Food and Nutrition Board were approved by the Council on Foods and Nutrition for purposes of judging nutritional claims in advertising. The National Nutrition Conference for Defense held in Washington in May 1941 received the active cooperation of the Council.

FORTIFICATION OF FOODS

The principal problems confronting the Council during the year covered by this report again have centered about the question of the fortification of foods with vitamins and minerals, and the Council has approved the enrichment of flour and of bread along the lines suggested by the National Research Council and developed by the Food and Drug Administration at public hearings. The Council has aided in the production of advertising material that promotes the use of enriched flour and bread in a truthful manner.

At the present time the Council believes that it is inexpedient and undesirable to add thiamine or other members of the vitamin B complex to sugar, syrups, candy, carbonated beverages and other products containing appreciable quantities of sugar. On the other hand, the Council favors the addition of vitamin A to oleomargarine and commends the Bureau of Animal Industry for removing its long time opposition to the presence of vitamins in establishments which prepare oleomargarine from fats of animal origin under federal inspection. In view of the action of the Food and Drug Administration to standardize vitamin A fortified oleomargarine at a level of 9,000 U. S. P. units of vitamin A to the pound, the Council raised its own standard of 7,500 U. S. P. units to this level as well. This amount is considered to be about the average vitamin A value for butter, but summer butter may contain more than 20,000 U. S. P. units of vitamin A to the pound.

The Council on Foods and Nutrition does not accept any general purpose foods other than milk when they are fortified with vitamin D. Evidence regarding the value of vitamin D fortified cereals is accumulating, however, and the Council is continuing to study this evidence. At the present time it appears that vitamin D is of value only in association with calcium and phosphorus. All evidence shows that the securing of a proper amount of calcium in the diet is fully as important as the vitamin D intake, and the Council has not given favorable consideration to the fortification of milk with more than the present accepted maximum quantity of vitamin D, which is 400 U. S. P. units to the quart. Milk fortified with 600 U. S. P. units of vitamin D to the quart has been marketed, but the Council voted not to accept this product.

The question of mixed vitamin therapy was considered, and it was recommended to the Council on Pharmacy and Chemistry that favorable consideration be given to those polyvitamin preparations which are otherwise acceptable and which provide in the daily dose the various vitamins in quantities that are related in some uniform simple manner to the daily requirements of each. A general report on the subject has been prepared in cooperation with the Council on Pharmacy and Chemistry.

In cooperation with the Council on Industrial Health, consideration has been given to the question of indiscriminate vitamin administration to industrial workers. The Council on Foods and Nutrition disapproves this practice, although the value of vitamin therapy under the direction of a physician is recognized.

PROBLEMS AND PRODUCTS CONSIDERED

One of the most difficult problems before the Council has been the formation of a decision regarding tolerances for lead and arsenic in foods. Governmental authorities recently have raised the tolerance for lead and arsenic, but the Council on Foods and Nutrition voted to retain its old standards.

The Council gave further consideration to claims in advertising for the value of gelatin in combating fatigue and concluded that the evidence made available is insufficient to warrant any change in allowable claims for gelatin.

The tendency of firms to develop and promote the use of prepared dessert products especially for children was given careful study. The Council is of the opinion that desserts have no justified place in the dietary of the infant and will accept only those commercial products which contain a minimum of 50 per cent by weight of fruit or milk or a combination of fruit and milk.

The Council on Foods and Nutrition gradually is limiting its scope so that it may devote more attention to those products which are most important from the health point of view. This policy is being carried out gradually so that firms that have cooperated with the Council in its efforts to promote the preparation of good foods truthfully advertised would not be placed at a serious disadvantage.

Among the new products of interest that have been favorably considered by the Council have been various ingredients for use by bakers for the making of enriched bread, a new type of syrup made from corn starch by controlled hydrolysis, and an infant feeding preparation for infants that cannot tolerate cow's milk the feature of which is the adoption of a mixture of amino acids for the protein.

PUBLICATIONS

The book "Accepted Foods and Their Nutritional Significance" now is undergoing extensive revision. The supply of the book on the vitamins, which was developed in collaboration with the Council on Pharmacy and Chemistry, has been exhausted, and plans have been considered for the publication of a revised series of articles on this subject. The Council is planning to sponsor during 1942 a new series of articles on foods and nutrition.

CHANGES IN MEMBERSHIP

During the year the Council lost through death the services of Dr. Mary Swartz Rose. A distinguished nutritionist, Dr. Rose had served the Council faithfully for a number of years and had contributed greatly to the effectiveness of its work. Dr. C. A. Elvehjem of Madison, Wis., was elected to succeed Dr. Rose as a member of the Council.

This report of the Council on Foods and Nutrition does not by any means reflect fully the activities of the Council during the past year, for the reason that it would require a report of excessive length to present in detail all matters that have received official consideration and to mention all the problems and products that have been brought before the Council. The report discusses only some matters of the most important, immediate interest in the field of nutrition.

Summary

The Council on Foods and Nutrition during the year covered by this report continued in every possible way to cooperate with governmental agencies in matters coming within the scope of the Council.

The principal problems confronting the Council again centered about the question of the fortification of foods with vitamins and minerals, and the Council approved the enrichment of flour and bread along lines suggested by the National Research Council and developed by the Food and Drug Administration.

The Council at present believes it is undesirable and inexpedient to add thiamine or other members of the vitamin B complex to products containing appreciable quantities of sugar but favors the addition of vitamin A to oleomargarine and has raised its standard for this product to the level recently set by the Food and Drug Administration.

The Council does not accept any general purpose foods other than milk when they are fortified with vitamin D but is continuing to study the evidence regarding the value of vitamin D fortified cereals.

The question of mixed vitamin therapy was considered, and it was recommended to the Council on Pharmacy and Chemistry that favorable consideration be given to certain polyvitamin preparations.

The Council on Foods and Nutrition, in cooperation with the Council on Industrial Health, considered the question of indiscriminate vitamin administration to industrial workers and disapproved this practice.

Among difficult problems before the Council during the year were the formation of a decision regarding tolerances for lead and arsenic in foods, the consideration of claims in advertising for the value of gelatin in combating fatigue and the tendency of firms to produce and promote the use of prepared dessert products especially for children. The Council voted to retain its old standards with respect to tolerances for lead and arsenic, concluded that the evidence available is insufficient to warrant any change in allowable claims for gelatin and, since it is of the opinion that desserts have no justified place in the dietary of the infant, will accept only those commercial products which contain a minimum of 50 per cent by weight of fruit or milk or of a combination of fruit and milk.

The Council is gradually limiting its scope to devote more attention to those products which are most important from a health point of view.

Accepted Foods and Their Nutritional Significance, an official publication of the Council, is being revised and plans are being considered for the publication of a revised series of articles on the vitamins and a new series on foods and nutrition.

During the year the Council lost, through death, the services of Dr. Mary Swartz Rose, a distinguished nutritionist. Dr. C. A. Elvehjem was elected to succeed Dr. Rose as a member of the Council.

The Chemical Laboratory

The Chemical Laboratory marked its thirty-fifth anniversary in October 1941. The Laboratory has functioned continuously during this period to supply accurate and critical chemical information to the medical profession, primarily in connection with the consideration of products submitted to the Council on Pharmacy and Chemistry. Because of continued rapid advances in the therapeutic armamentarium, the work of the Laboratory has consistently increased in amount and scope, and the record of years of careful, constructive and varied service is one of which the Association can be justly proud.

Dr. A. E. Sidwell Jr., a member of the Laboratory staff for several years, was made Director of the Chemical Laboratory following the untimely death of Dr. Paul Nicholas Leech, former Director.

TESTS AND STANDARDS

Each year brings forward many new synthetic therapeutic agents for which tests and standards must be elaborated and evaluated in connection with their consideration by the Council on Pharmacy and Chemistry and, in addition, numerous accepted products must be reexamined and new dosage forms of these and of official drugs must be analyzed. During the past year the Laboratory has been particularly active in the preparation or critical consideration of standards for aluminum hydroxide gel, amylcaine hydrochloride, blended oils containing vitamins A and D, solutions and tableted preparations of calcium gluconate, delvinal sodium, dextrose in lactate-Ringer's solution, epinephrine in oil, mecholyl bromide and mecholyl chloride, merphenyl borate, merphenyl nitrate, merphenyl picrate, nikethamide, pyridoxine hydrochloride, seconal sodium, sulfadiazine and sulfadiazine sodium, sulfaguanidine monohydrate, sulfathiazole sodium and its hydrates, a number of antihemorrhagically active substances (vitamin K) including menadione and zinc insulin crystals and zinc peroxide medicinal. The complete roster of the products examined in the Laboratory during the year, exclusive of the various dosage forms of similar products considered, contains some seventy-two different therapeutically active substances.

Members of the departments of pharmacology of the University of Chicago and the University of Minnesota have cooperated with the Laboratory in problems concerning the standardization of epinephrine and sulfathiazole.

During the year the Laboratory has continued to give all possible assistance to other bureaus and departments of the Association and has cooperated with the laboratories of the American Dental Association, the Food and Drug Administration and many manufacturers in the exchange of chemical information concerning standards for the identity, purity and strength of various drugs.

From time to time, fellows of the International Health Division of the Rockefeller Foundation have been assigned to the Chemical Laboratory of the American Medical Association so that they might have opportunity to have the benefit of a period of basic training in drug analysis. Within the past year Mr. Jose Crusellas Ventura of Guayaquil, Ecuador, spent several weeks in the Laboratory. The members of the Laboratory staff greatly enjoyed and appreciated their association with Mr. Crusellas.

Members of the Laboratory staff have attended and addressed a number of meetings of chemical groups and have contributed original articles to important chemical publications. Work is in progress and plans have been formulated to augment the scope and efficiency attainable with the generally excellent laboratory equipment, particularly in connection with the facilities for microchemical and spectroscopic work.

Council on Industrial Health

INDUSTRIAL HEALTH AND WAR INDUSTRY

A recent joint session of the Council on Industrial Health with the Subcommittee on Industrial Health and Medicine of the Federal Security Agency indicates that the Council has established satisfactory contact and has perfected its own organization to an extent that will make it of genuine service in the prosecution of the war. Specific developments in this direction have been the following:

It was agreed that the medical profession is in better position to assume a greater degree of responsibility for industrial health activity than ever before. Medical societies in states and counties have been supplied with recommendations calculated to accelerate this process and have also been repeatedly instructed that the physician in community practice must be prepared to provide industrial health services in medium sized and small plants and that a high degree of organization will be necessary to meet the medical requirements of war time industrial production.

It was recognized that, if industry is to absorb the products of accelerated industrial health training, some concomitant program of instructing industrialists in the advantages of medical supervision over workers is highly essential. It is the feeling that an agency for public information, preferably attached to the Subcommittee on Industrial Health and Medicine, should undertake this educational activity. Failure to push this type of voluntary program vigorously might logically lead to compulsory forms of industrial medical supervision according to the present European pattern.

The Council has recognized that adequate personnel is basic to a solution of medical service in industry, and it intends to

cooperate in as effective a manner as possible with the Procurement and Assignment Service. Since this war is being fought on the assembly lines as well as in the field, it would be a serious error to strip industry of its competent and qualified medical personnel even though many of them happen to be within the age limits and degrees of physical fitness considered desirable for the armed forces.

Not much progress has been made in promoting cooperation between bureaus of industrial hygiene in state and local governments and the committees on industrial health in state and local medical societies. Much greater effort will be made in this direction in the coming months. Recent reports from the Division of Industrial Hygiene of the U. S. Public Health Service indicate that thirty-six states, four cities, two counties and two territories conduct industrial hygiene bureaus requiring an annual expenditure of $1,000,000. Activities of this kind are of unusual significance now, and a program of reciprocal helpfulness between the bureaus and the profession at large can represent a real contribution to industrial production.

During recent months the registration of volunteers for placement in war industry has occupied a considerable share of activity at the headquarters office of the Council. The organization of the Procurement and Assignment Service suggests that henceforth the Council may serve as a source of information to employers who are anxious to secure assistance in obtaining and retaining the services of industrial physicians. Notification of this change in method will be brought to the attention of manufacturers, commerce and trade associations directly and through business and trade publications.

DICTIONARY OF INDUSTRIAL HEALTH

The scope of the Dictionary of Industrial Health, a project which began as a contribution toward standardization in the field of industrial health nomenclature, has been successively expanded until the title "Dictionary" seems most applicable. Publication of this compilation will tend to stabilize accepted procedure in industrial health at a time when much interest in terminology and technic exists. It is expected that editorial revision by consultants and in the Council office will have been completed by early fall.

EDUCATIONAL ACTIVITY

The Council on Industrial Health has been requested by the Council on Medical Education and Hospitals to assume the initiative in calling the attention of educators and the profession at large to deficiencies in industrial medical education. A report has been prepared, representing a joint declaration by the Council and a special committee of the American Association of Industrial Physicians and Surgeons, containing definite recommendations about the importance of better teaching and its organization and content. This outline can be used, with suitable modifications, for the organization of continuation studies of the introductory or refresher type under medical society sponsorship or in medical schools. The material also can be adapted to extended periods of training designed to equip physicians as specialists in industrial practice.

The Council has recognized health education as a proper function of industrial practice, and special attention has been given to the employment of HYGEIA as a means for acquainting employers and workers with the advantages of industrial health, its proper objectives and its methods.

In other respects the general details of the Council's educational activities continue as reported in previous years.

RELATIONSHIPS WITH GROUPS AND ORGANIZATIONS

Committees on Industrial Health in State and County Medical Societies.—Major emphasis must continue to be placed on improving the character of membership in cooperating committees on industrial health in the state medical societies and on extension of this type of organization down into the county societies. Field activity by the Council's headquarters organization will serve to encourage improved regional and local leadership as well as to recommend specific programs of investigation, correlation and education. Industrial Health Bulletins continue to serve as a means of interchange of expression between these committees and the Council. This activity, in the opinion of the Council, exceeds all others in terms of practical results.

Sections of the Scientific Assembly.—The steps taken to arouse interest in industrial health in the sections of the Scientific Assembly through the creation of advisory committees have been remarkably productive. These sections are great reservoirs of authoritative information and have already served as sources of sound advice and help in the solution of special problems.

Other Agencies in the American Medical Association.—The Council has completed its first series of recommendations of objectives and functions in industrial health, entitled "An Outline of Procedure for Physicians in Industry," also reviewed and approved, after modification, by the Judicial Council. It is expected that this outline will demonstrate to the profession at large that industrial practice can be conducted ethically, scientifically and efficiently in full recognition of the best interests of the worker, employer, official agencies and the community at large.

A joint report has been prepared by representatives of the Council on Foods and Nutrition and the Council on Industrial Health on indiscriminate administration of vitamins to industrial workers, which effectively answers the many inquiries received about promotional activity among employers by manufacturers of vitamin products.

It has been recommended that the Council on Industrial Health develop an industrial medical formulary in collaboration with the Council on Pharmacy and Chemistry and with such additional help as may be necessary from the advisory committees of the sections of the Scientific Assembly. This formulary would define general standards to be applied to preparations and equipment, protective rather than therapeutic in nature, designed for use in the medical management or control of industrial exposures. A development of this kind would tend to avoid the necessity for setting up machinery to pass judgment on or approve individual preparations or equipment.

The Council has reviewed, with representatives of the Council on Physical Therapy, certain problems relating to the nomenclature of respirators.

Members of the Council have been requested to prepare radio scripts on industrial health subjects of general interest as a part of the broadcasting program of the Bureau of Health Education.

Industrial Nursing.—The Council on Industrial Health has maintained its interest in industrial nursing, especially in view of a strong movement by nursing and public health organizations toward providing a program of service to small industry, which depends mainly on part time employment of personnel from visiting nurse associations. Since the physician must be the central figure in any completely dependable industrial health acuivity, these developments must be regarded with unusual interest by medical organizations. However, the Council expects to promote the professional status of the industrial nurse in every way possible and has recently responded favorably to an invitation to appoint a representative to act as consultant to a Committee of the American Public Health Association to Study the Duties of Nurses in Industry. Meanwhile the Council will engage, as necessity dictates, in independent investigation of industrial nursing activity, particularly in the preparation of standing orders for industrial nurses, part time nursing in industry at hourly rates, and a simple report form applicable for recording absences in small industry.

Manufacturing Organizations.—The Council has been interested in the industrial health programs in various stages of development of the National Association of Manufacturers and the U. S. Chamber of Commerce. Both organizations have investigated the merits of appraisal plans, and there is some prospect that a national campaign may shortly ensue to arouse interest in industrial health and to establish a means of appraising the efforts of established industrial medical services.

Organized Labor.—If the Council is to be regarded as an influential, impartial and unbiased agency representing medical opinion in the field of industrial health, it must give some consideration to the opinions of the beneficiaries of this form of medical activity. Study will be necessary to indicate the best means for acquiring information of this character and of giving it due consideration in the formulation of medical policy in this field.

INDUSTRIAL PHYSICAL EXAMINATIONS

Repeated requests for information outlining definite procedure in the conduct of preemployment and periodic physical examination have made it imperative that the Council prepare an outline covering this subject to be made available to physicians called on to organize services of this description in industry. In the preparation of this outline the principles already formulated by the American Medical Association on periodic health examinations will be adapted to industrial use.

OCCUPATIONAL DISEASE REPORTING

Available evidence indicates that occupational disease reporting is improving. Since progress cannot occur without reasonably dependable statistics on the nature and incidence of occupational disability, persistent effort will be made to arouse and sustain interest throughout the profession in this desirable practice.

WORKMEN'S COMPENSATION

In the early discussions which led to the formation of the Council on Industrial Health, much emphasis was placed on the necessity for improvement in workmen's compensation procedure. Medical relations in this field dealt largely with economic considerations—the provision of medical care, methods of payment, critical analysis of contracts for medical care and hospitalization, medical testimony and disability evaluation. Important as these activities have been, the Council now believes it desirable to supplement them through consideration of the structure and administrative practices of the industrial commissions themselves. Much improvement can occur in the direction of better adjustment between compensation authorities, the medical profession and rehabilitation agencies. The Council is led to this conclusion since it is apparent that legislation with respect to occupational diseases is being adopted without any reference to medical considerations in much the same fashion as occurred when compensation for industrial accidents was being adopted. This failure to consult medicine in fields where sound medical advice is urgently needed has already led to a great many loose and faulty administrative practices.

The Council, therefore, has appointed a Committee on Workmen's Compensation, whose first report contains the following specific recommendations:

That the Council on Industrial Health prepare a series of authoritative articles on prevailing medical opinion about various forms of actual or alleged industrially connected disability, these to be published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Ability of physicians, lawyers, courts and administrators to refer to established medical opinion of this character should do much to eliminate unwarranted claims. Such a series of articles should also emphasize medicine's essential position in the administration of workmen's compensation and would improve the status of the physician in this respect.

That effort should be made to assure recognition of medicine's interest in all proposed compensation legislation, especially in respect to proper representation on administrative boards.

That there be presented, preferably annually in THE JOURNAL, data dealing with workmen's compensation practice with special reference to medical considerations, these reports to reflect progress or lack of it in the various states and in the country as a whole.

That the committee extend its membership to include physicians and experts who have broad experience in compensation procedure and who can assist in the promotion of a campaign to improve through statutory revision the present undesirable elements in medical relations under workmen's compensation.

The Council has been notified of efforts to define conditions under which tuberculosis may be considered industrial in origin. Great interest is manifested in this development, since a proposal to compensate for tuberculosis would open the doors to health insurance through the inclusion of many other comparable types of chronic disease. Furthermore, employers would tend to exclude all persons who have or have had tuberculosis from any employment.

INDUSTRIAL HEALTH RESEARCH

The Council has recently appointed a Committee on Research to define problems suitable for investigation, to recommend subsidization of suitable research projects by the American Medical Association or others and to encourage investigations in harmony with the existing research programs of the American Medical Association and the National Research Council. It is also expected that there will be increasing necessity for the adoption of a program to support work which may be undertaken by cooperating committees of the sections of the Association's Scientific Assembly.

Summary

The Council on Industrial Health has held joint meetings with the Subcommittee on Industrial Health and Medicine of the Federal Security Agency and it has been possible to determine spheres of greatest usefulness under war time industrial production.

Although there has been much progress, great effort must be made to preserve existing qualified personnel and to create educational opportunities for industrial medical volunteers.

Better rapport should exist between committees on industrial health in medical societies and bureaus of industrial hygiene.

As in former years, much emphasis has been placed on educational activity, which has taken the form of annual congresses on industrial health, continuation study and extended training, publications, clearing house services and exhibits. One practical accomplishment has been the development of specific recommendations to medical schools concerning the organization, content and available facilities for improved undergraduate teaching. Results already obtained through field work have led the Council to conclude that this is far and away the most successful activity to date in arousing interest in practical organization for increased industrial health service.

The advisory committees which have been created in the sections of the Scientific Assembly have already demonstrated ability to undertake special assignments for investigation and report. Active cooperation has been maintained with many of the agencies in the headquarters establishment of the Association, and particularly noteworthy results are the "Outline of Procedure for Physicians in Industry" and a recent report on "Vitamin Administration in Industry."

The Council has continued its interest in auxiliary professional groups such as industrial hygienists and nurses. Current plans for promotion of industrial nursing services are of especial significance, and steps have been taken to represent medical opinion in these developments.

Self-appraisal plans as a means of rating the adequacy of industrial medical departments is regarded as of considerable importance, and the Council is prepared to advance these activities in all practical and effective ways. The best methods of reflecting the opinion of organized labor in the field of industrial medical policy are also currently being studied.

In response to repeated requests for a dependable program of industrial physical examinations, an outline of principles which will be in substantial agreement with those already formulated by the American Medical Association in respect to periodic health examinations is being prepared. Persistent effort will also be made to arouse and sustain interest throughout the profession in the desirable practice of reporting occupational diseases to agencies concerned with vital statistics.

The Council is now preparing to make some substantial contributions to certain perplexing problems in the field of medical relations under workmen's compensation, having in mind the growing trend toward indemnification for occupational disease. Present plans include the preparation of authoritative statements on prevailing medical opinion on forms of industrially connected disability which will be available to physicians, lawyers, administrators and others. There should be annual publication of statistical and other data on workmen's compensation practice, with special reference to

medical considerations. The Council is continuing its interest in the relationship between trauma and disease and is currently studying conditions under which tuberculosis may be considered industrial in origin.

The Council on Industrial Health has appointed a Committee on Research to promote investigation in the field of industrial medicine, surgery and hygiene in harmony with the existing research programs of the American Medical Association and the National Research Council. The special investigations undertaken by cooperating committees of the sections of the Scientific Assembly also will merit substantial support.

Bureau of Health Education

The work of the Bureau of Health Education has for the most part been directed along the same lines as in previous years.

During 1941 the Bureau received and answered approximately ten thousand letters from laymen. Correspondence with physicians and cooperating agencies included the receipt of and replies to almost five thousand letters, while miscellaneous mail, including communications stimulated by the Association's radio broadcasting program and exhibits at the Cleveland Health Museum, the Chicago Museum of Science and Industry, the Milwaukee Midsummer Festival and several state and county fairs amounted to approximately fifteen thousand pieces.

BUREAU PUBLICATIONS

Sixteen new pamphlets were added to the list of publications maintained by the Bureau of Health Education, while eight of the pamphlets formerly used were revised and four discontinued. More than two hundred and three thousand copies of the publications sponsored by the Bureau were distributed through the Order Department in 1941 in addition to one hundred and eight thousand others sent out in quantities by the Bureau. Eighty-eight thousand health posters were ordered by a large industrial concern for distribution to its employees as an insert in its house organ.

The Director and Assistant Director of the Bureau have cooperated as fully as possible with the Editorial Department of THE JOURNAL and HYGEIA. Thirty-nine articles originating in the Bureau of Health Education were published in 1941 in publications other than those of the American Medical Association.

RADIO PROGRAM

In cooperation with the National Broadcasting Company, the first series of Doctors at Work programs was completed in June, at which time the sixth season of dramatized network broadcasting terminated.

The success of the program Doctors at Work left no logical course open except to continue with a second series, in which the adventures of the same fictitious young doctor, now in a wartime setting in an industrialized home community, were continued. Unfortunately, the National Broadcasting Company was unable to schedule the second series at an evening hour. The hour accepted was 5 to 5:30 p. m., Saturdays, eastern standard time. Approximately one hundred stations, including three Canadian stations, were in the network to which the program was available.

State and county medical societies and the Woman's Auxiliary to the American Medical Association have continued their valuable cooperation in publicizing the Association's broadcasting program.

At the Cleveland session radio broadcasts were arranged in cooperation with five local and network stations. There were eleven local broadcasts, three broadcasts on the networks of the National Broadcasting Company and two on those of the Columbia Broadcasting System.

The radio library service maintained by the Bureau showed a sharp decline in activity during 1941. Two thousand, two hundred and forty-six copies of radio talks were sent out on request. Sixty-one state and county medical associations received radio material suitable for local broadcasting. The Bureau also assisted in preparing or editing radio scripts for other organizations.

MEETINGS AND CONFERENCES

In 1941 the Director and the Assistant Director of the Bureau of Health Education appeared before one hundred and forty-eight audiences in various parts of the United States. These appearances involved more than 43,000 miles of travel, and communities in sixteen states were visited. It was not possible to accept all the invitations extended to the Bureau's staff; forty-seven such invitations had to be declined because of schedule conflicts or for other important reasons. Attendance at ten medical meetings addressed by the members of the Bureau's staff was one thousand, three hundred and forty-eight; one hundred and thirteen lay audiences were addressed with an attendance of more than thirty-seven thousand persons, and twenty-five addresses were delivered before audiences composed of teachers, nurses and members of other professional groups with an attendance of more than four thousand.

HYGEIA CLIPPING LOAN SERVICE

The HYGEIA clipping collections were lent to four hundred and eighty-one physicians in forty states and Canada to aid them in preparing speeches for lay audiences. Local HYGEIA loan collection projects are continuing to be initiated by several more medical societies. The continuation of this development tending toward decentralization reveals a wholesome trend and is, in fact, the only way in which this bureau can hope to meet all the health education needs of the medical profession.

COOPERATION WITH LAY ORGANIZATIONS

Joint Committee on Health Problems in Education (with the National Education Association).—The Joint Committee met in Atlantic City in February during the meeting of the American Association of School Administrators. Dr. Isaac Abt, a member of the Committee for thirty-one years, retired and was succeeded by Dr. Glenville Giddings of Atlanta, Ga. Dr. Charles C. Wilson, New York, was elected chairman of the committee for his third successive year, with Dr. Thurman B. Rice, Indianapolis, vice chairman, and Dr. W. W. Bauer, Chicago, secretary.

Deliberations of the committee had to do mainly with the publication known as Suggested School Health Policies and the preparation of a statement on the educational and nutritional aspects of school lunches and a supplement thereto dealing with sanitary requirements for school lunches.

A fifth Symposium on Health Problems in Education under the sponsorship of the Joint Committee together with the Section on Pediatrics, the Section on Preventive and Industrial Medicine and Public Health, the Section on Ophthalmology and the Section on Laryngology, Otology and Rhinology of the American Medical Association was held during the annual session of the Association in Cleveland.

American Association of School Administrators.—The Director of the Bureau of Health Education was appointed by the American Association of School Administrators to its 1942 Yearbook Commission on Health Education. This project, begun in 1940, was completed in 1941, during which year two meetings of the commission were held. The Yearbook appears to have been successfully completed and will be published early in 1942.

4-H Clubs.—The National Committee on Boys and Girls Club Work (4-H Clubs) continued in 1941 as in previous years. The recommendations of the Director of the Bureau of Health Education, who serves on this committee, looking toward the modification and the ultimate abandonment of the "healthiest boy and healthiest girl" contest have not yet been fully adopted, but there are some encouraging evidences that state leaders are beginning to interest themselves in further modifications of this contest.

National Congress of Parents and Teachers.—The National Congress of Parents and Teachers continues its summer round-up of the children, and the Director of the Bureau of Health Education continues as a member of the Advisory Board. Although the 1941 request that the Association furnish the congress half of its summer round-up blanks was approved,

the national congress has notified us that it will not request the blanks owing to the paper shortage.

American Public Health Association.—The Committee on Professional Education of the American Public Health Association, of which the Director of the Bureau is a member, met in New York late in the year and adopted a comprehensive set of standards and educational qualifications for health education personnel which, if adopted by the governing council of the American Public Health Association, recommended by the Conference of State and Territorial Health Officers, will probably serve as a basis for the merit systems in the several states receiving aid from federal social security funds.

National Health Council.—The Director of the Bureau of Health Education has been appointed by the Board of Trustees to membership on a Committee for the Study of Voluntary Health Agencies. This has not yet begun to function.

Other Organizations.—Among other organizations with which the Bureau has maintained cooperative relations are the American Camping Association (advisory board), National Organization for Public Health Nursing (advisory committee, community nursing service), National Conference for Cooperation in School Health Education (executive committee), General Federation of Women's Clubs (advisory committee) and American Museum of Health (scientific advisory board).

COOPERATION WITH STATE AND COUNTY MEDICAL SOCIETIES

The Bureau has continued to serve as a clearing house of information to state and county medical societies and to be of assistance in developing cooperative programs and satisfactory relationships between the medical profession and other organizations working toward similar ends.

COOPERATION WITH GOVERNMENTAL AGENCIES

As in previous years, the Bureau has continued its cooperation with departments of the federal government and of state governments, including health departments and departments of education. It has also cooperated as fully as possible with local boards of health, school boards and libraries. The federal departments and divisions with which the Bureau has maintained cooperative relationship include the Federal Security Agency, Veterans' Administration, War Department, Department of Agriculture, Federal Works Agency, Department of the Interior and Department of Labor.

The Director of the Bureau continues to serve on the General Advisory Committee of the United States Children's Bureau.

PROTECTION OF RESEARCH

The Bureau of Health Education cooperated, as in the past, with the Committee for the Protection of Medical Research and distributed nearly five thousand copies of the pamphlet entitled "Animals in Research" to the members of graduating classes of recognized medical schools.

A meeting of the Committee for the Protection of Medical Research with representatives from similar committees of other scientific agencies was held in Chicago on Feb. 18, 1941. Ways and means for carrying out the defense of medical research in a national defense and (then) possible wartime setting were discussed.

WOMEN'S HEALTH INTERESTS

The Bureau conducted a survey of women's health interests, and a preliminary summary of the results was published in the Bulletin of the Woman's Auxiliary to the American Medical Association. The Bureau also prepared material on nutrition for use by the auxiliaries as a part of the nutrition conservation program of the Federal Security Agency.

Summary

The Bureau of Health Education answered approximately ten thousand letters from laymen, five thousand from physicians and cooperating agencies and fifteen thousand stimulated by exhibits, health museums and radio programs. Sixteen new pamphlets were added to the list of publications, eight revised and four discontinued. More than three hundred and eleven thousand copies of Bureau publications were distributed in 1941. The Bureau contributed thirty-nine articles to publications other than those of the American Medical Association.

The radio series Doctors at Work was continued. Eleven local programs over five stations were broadcast during the Cleveland session, and programs were also broadcast over the networks. Approximately twenty-two hundred radio talks were sent out to state and county medical societies from the Bureau's radio library of almost a thousand titles.

The Director and Assistant Director appeared before one hundred and forty-eight audiences, involving more than 43,000 miles of travel in sixteen states and accounting for a total audience of approximately forty-two thousand, three hundred persons. Hygeia loan clipping collections were lent to four hundred and eighty-one physicians in forty states and Canada to aid them in preparing talks for local lay audiences.

The Bureau continued its cooperation with the National Education Association, the National Committee on Boys and Girls Club Work (4-H Clubs), the National Congress of Parents and Teachers, the General Federation of Women's Clubs, the American Public Health Association, the American Camping Association, the Joint Committee on Community Nursing Service and eight departments of the United States government. The Director continued to serve on the General Advisory Committee of the United States Children's Bureau and the 1942 Yearbook Commission of the American Association of School Administrators and was appointed to memberships on the Committee for the Study of Voluntary Health Agencies of the National Health Council and the Scientific Advisory Board of the American Museum of Health.

Miscellaneous projects included continued cooperation with the American Medical Association Committee for the Protection of Medical Research and a survey of women's health interests, a cooperative project with the Woman's Auxiliary to the American Medical Association.

Bureau of Legal Medicine and Legislation

Mr. J. W. Holloway Jr., who has served as Acting Director of the Bureau of Legal Medicine and Legislation since the retirement of Dr. William C. Woodward, has been designated as Director.

MEDICOLEGAL ABSTRACTS: VOLUME 3

The first volume of Medicolegal Abstracts was published in 1932 and contained the abstracts that had been printed in THE JOURNAL during the calendar years 1926 to 1930 inclusive. The second volume was published in 1936 and contained the abstracts that had appeared in THE JOURNAL from 1931 to 1935. A third volume, now in the course of preparation, will include the abstracts that have appeared in THE JOURNAL from 1936 through 1940. It has been suggested that the value of these compilations would be greater if abstracts were arranged in accordance with their subject matter. Possibly this would be true. The type for the abstracts, however, is held over the five year period and the difficulty and cost of rearrangement of such a considerable amount of type have not been justified by the limited circulation of the first two volumes of the series. Since every effort has been made to provide an adequate index, the disadvantage of having the abstracts appear in the chronological order in which they were originally printed in THE JOURNAL is considerably lessened.

TAXATION OF ACCOUNTS RECEIVABLE

In THE JOURNAL, May 24, 1941, page 2426, there was published an abstract of a decision of the United States Supreme Court that focused attention on a problem which confronts the estates of physicians in connection with the payment of income taxes for the year of death. During his life a physician normally reports as income for federal income tax purposes the amounts actually received. By reason of a provision in the income tax law, however, for the year of death there must be reported not only the actual amount received but also a fair appraisal of the outstanding accounts on the books of the tax-

payer. The result of this requirement is that the reportable income for the year of death is artificially built up, bringing into play the higher surtax rates, and the estate of the deceased taxpayer may be subject to considerable strain to provide sufficient funds with which to pay the increased tax that necessarily results. This situation results from an amendment to the income tax law that was passed by the Congress in 1934. Prior to 1934, if a taxpayer died who had been on a cash receipts and disbursements basis for federal income tax purposes, the collectible accounts outstanding on his books at the time of death were not subject to income tax, even when collected.

The injustice of the present method of imposing income taxes on the taxpayer for the year of death has been given consideration by the Treasury Department. At the time this report is being prepared, the House Committee on Ways and Means is giving consideration to the formulation of a new revenue act. On March 3 the Secretary of the Treasury and his tax adviser appeared before that committee with recommendations for the act. The secretary pointed out that wartime rates make it imperative to eliminate as far as possible existing inequities which distort the tax burden on certain taxpayers. If the Congress follows the recommendation of the Treasury Department, an unjust burden will be lifted from the estates of taxpayers who have been on a cash receipts and disbursements basis for income tax purposes, especially the estates of physicians, dentists and other professional men.

Several suggestions as to procedures that a physician may adopt during his lifetime to lighten the income tax load on his estate were discussed in detail in a statement prepared by the Bureau and published in THE JOURNAL, Jan. 10, 1942.

PROTECTION OF CIVIL RIGHTS OF PERSONS IN MILITARY SERVICE

During the first world war the Congress passed a measure to protect the civil rights of persons in military service. A similar measure was enacted in 1940 to provide the same type of protection for those now serving. The broad purpose of the law is to free persons in military service from harassment and injury to their civil rights during their term of military service and thus to enable them to devote their entire energy to the defense needs of the nation.

This law applies to all members of the Army, Navy, Marine Corps and Coast Guard, to members of the United States Public Health Service detailed by proper authority for duty with the Army or Navy, and to those in training who are undergoing education under the supervision of the United States preliminary to induction into military service. Civil liabilities are not extinguished by this law, but enforcement is deferred in those cases in which the opportunity and capacity to meet such obligations are impaired by reason of military service. A detailed analysis of the law was published in THE JOURNAL, Jan. 24, 1942.

PRIORITIES AND MEDICAL SUPPLIES

The existent emergency has made it necessary that supplies of essential materials be preserved to promote the national welfare. Sources of supply have diminished or disappeared altogether and the accelerating need of raw materials such as chemicals, metals and rubber for war purposes has resulted in an accompanying scarcity for civilian use.

Provision has been made, however, for the release of sufficient material for the production of equipment essential to the delivery of adequate medical care to the civilian population. A copy of the order under which this was accomplished (Preference Rating Order No. P-29) was published in THE JOURNAL, Sept. 27, 1941, page 1103. Later a drastic curtailment of the use of rubber for civilian purposes became essential because of the Far Eastern situation. This order prevented the use of rubber for the production of many articles necessary in the practice of medicine. The original rubber order was subsequently modified so that items made of rubber necessary in the practice of medicine could be produced. An analysis of this modifying order was published in THE JOURNAL, March 14, page 905. Furthermore, physicians have been given a priority classification in the distribution of automobile tires to the extent that such tires are needed in serving patients. Physicians will, it is hoped and believed, cooperate with the spirit of the classification that has been accorded them in this respect.

The priority system that has been formulated does not and cannot be expected to function without occasional inadequacies. While the procurement of health supplies has been provided for, difficulty has been experienced by some physicians in obtaining needed repairs to professional equipment because of the fact that Preference Rating Order No. P-100, relating to repairs, maintenance and operating supplies does not cover professional equipment owned by private practitioners of medicine; it does apply to equipment owned by hospitals, clinics and sanatoriums. This matter has been the subject of conferences between a representative of the Bureau of Legal Medicine and Legislation and the Health Supply Section of the War Production Board and it is expected that a solution will be announced shortly.

ADEQUACY OF SUPPLY OF NARCOTICS: RESTRICTIONS ON SALE OF PAREGORIC

Testifying on Dec. 17, 1941 before a subcommittee of the House Committee on Appropriations, H. J. Anslinger, United States Commissioner of Narcotics, expressed the belief that the supply of narcotics in the United States is sufficient to meet demands until 1945. Opium was obtainable from Turkey, he said, but the task of getting it to this country was a difficult one. That difficulty will no doubt increase. Concern was expressed by the commissioner, however, over the extent to which addicts are resorting to the use of paregoric to satisfy addiction, and a depletion of the reserve stock of the drug, built up to take care of military and naval needs and legitimate civilian use, was forecast unless the trend is halted. The commissioner pointed out that the per capita consumption of paregoric in this country is 1,500 per cent greater than it is in Canada, where sales are restricted to sales on prescription. He suggested that Congress will be asked to impose a similar restriction on sales of paregoric in the United States.

On March 25 there was introduced in the Senate a bill, S. 2405, by Senator George of Georgia, entitled "A bill to discharge more effectively the obligations of the United States under certain treaties relating to the manufacture and distribution of narcotic drugs, by providing for domestic control of the production and distribution of the opium poppy and its products, and for other purposes." The bill was introduced at the request of the Treasury Department to control the domestic production of the opium poppy and to insure an adequate supply of narcotic drugs for medicinal purposes in case of national emergency. Heretofore all opium for the manufacture of narcotic drugs has been imported. Present international conditions are of course making it increasingly difficult to obtain opium and, anticipating the possibility that the supply from abroad may be entirely shut off, the Treasury Department proposes in this bill to authorize the production of opium in this country under such strict government supervision as will insure against diversion to nonmedical use. The bill is pending in the Senate Committee on Finance.

COURT DECISIONS OF MEDICAL INTEREST

An ambiguity in the Harrison Narcotic Act concerning record keeping in connection with exempt narcotic preparations was clarified in a recent decision of the U. S. Supreme Court. That act, as far as the more potent narcotic drugs are concerned, excuses a physician from keeping records when he dispenses such drugs to patients on whom he is in personal attendance. With respect to the exempt preparations, the act imposes a duty of recordkeeping on "any manufacturer, producer, compounder, or vendor (including dispensing physicians)" of such preparations. The use of the designation "dispensing physicians" has led to the belief that the act imposes on a physician who dispenses any of the exempt preparations to a patient the duty of keeping a record of the transaction. In the case under discussion the Supreme Court said that Congress by using the words "dispensing physicians" clearly meant to exclude physicians administering to patients whom they personally attend.

The U. S. Supreme Court in another case, an abstract of which was published in THE JOURNAL, May 24, 1941, page 2426, upheld the action of the collector of internal revenue in including as income for the year of death a fair appraisal of

the interest of a physician in the accounts on the books of a partnership of which he was a member at the time of his death.

A decision by the Supreme Court of Nebraska clarified the law of that state with respect to the scope of osteopathy. The court said that a statute, such as obtains in Nebraska, granting a licensed osteopath the right to practice osteopathy in all its branches as taught in recognized osteopathic schools does not authorize such licenses to practice outside the recognized field of osteopathy, even if subjects outside the field are taught in such schools.

The Supreme Court of California, in a recent decision, upheld the action of a component county medical society in expelling a physician from membership. The physician involved in the case was charged specifically with a violation of a section of the Principles of Medical Ethics adopted by the society declaring it to be unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of the community. The charges against the physician involved his association with a county hospital. After the state medical association and the Judicial Council of the American Medical Association had sustained the action of the component society in expelling the physician, he appealed to the courts for relief. The California Supreme Court said that the courts are without authority to declare that a medical association is precluded from expelling a member who persists in practices which by the rules of the association, subscribed to in writing by the member, are unethical. Concerning any matter of policy involved in the adoption by the association of rules governing the conduct of members, the court was of the opinion that that was a matter for the membership itself to determine and that, in the absence of any showing that the policy adopted constitutes a violation of law, the courts will not undertake to interfere. Having agreed to be bound by the adopted rules, the court concluded, the physician was precluded from the judicial relief he sought.

FEDERAL LEGISLATION

Certification of Insulin.—The patent on insulin held by the University of Toronto expired on Dec. 23, 1941. Under this patent adequate standards of purity and strength of insulin had been maintained. To continue this protection to the users of the drug, it became necessary that Congress act promptly to pass necessary legislation. Such action was taken, and on December 22 the President signed a bill to amend the Federal Food, Drug and Cosmetic Act by providing for the certification of batches of drugs composed wholly or partly of insulin. The new law is composed of four sections. Section 1 amends the act named so that its prohibitions against forging, counterfeiting, simulating or falsely representing, or using identification devices without proper authority will apply in the case of such identification devices as may be required or authorized for insulin. Section 2 provides that a drug shall be deemed misbranded if it is, or purports to be, or is represented as a drug composed wholly or partly of insulin, unless (1) it is from a batch with respect to which a certificate or release has been issued under regulations to be promulgated by the Federal Security Administrator and (2) such certificate or release is in effect with respect to such drug.

Section 3 directs the Federal Security Administrator to establish, pursuant to regulations, standards of identity, strength, quality and purity for drugs composed wholly or partly of insulin and methods of assay to determine whether batches of such drugs, or packages therefrom, meet the standards prescribed by such regulations for such drugs. If a standard of identity, strength, quality or purity for insulin is set forth in any official compendium, such as the United States Pharmacopeia, the administrator may not prescribe any differing standard. Section 3 also requires the administrator to establish testing and certifying facilities and procedure and to issue certificates for batches meeting the requirements. As over age or improperly packaged or labeled insulin is unsafe, such certificates are to be effective only for the periods prescribed in the regulations, and the certified batches and drugs therefrom are to be protected by such certificate only for the prescribed period or for such part thereof as such drug meets the labeling and other requirements prescribed in the regulations for the protection of the public.

Authority is contained in section 3 too under which the administrator may determine and set out in the regulations schedules of fees which will cover the cost to the government of equipping and maintaining the facilities and compensating the personnel required for making the tests and assays. Provision was made in this section for the release, prior to the promulgation of regulations, of insulin which, in the administrator's judgment, could be released without risk as to safety and efficacy. This authority was given to the administrator in order to permit him promptly to release batches of insulin which had already been passed by the Insulin Committee of Toronto University as being of the necessary strength, quality and purity, thus avoiding the risk of a shortage. Section 4 of the law is designed to expedite the issuance of initial regulations. It directed the promulgation of the regulations within forty-five days, and they have been so promulgated.

Hospitals, Health Centers and Clinics in Defense Areas.—On June 28, 1941 the President approved a bill to provide for the acquisition of public works made necessary by the defense program. This program, which called for an initial expenditure of $150,000,000, was considered necessary because of the inability of many communities to cope alone with the demand for public works in the face of a phenomenal growth of population resulting from the expansion of defense industry and enlargement of military reservations and posts. The term "public work" as used in this legislation means any facility necessary for carrying on community life substantially expanded by the national defense program, especially schools, waterworks, sewers, sewage, garbage and refuse disposal facilities, public sanitary facilities, works for the treatment and purification of water, hospitals and other places for the care of the sick, recreational facilities, and streets and access roads.

Whenever the President finds in any area or locality that an acute shortage of public works necessary to the health, safety or welfare of persons engaged in national defense activities exists or impends which would impede national defense activities, and that such public works or equipment cannot otherwise be provided when needed or could not be provided without the imposition of an increased, excessive tax burden or an unusual or excessive increase in the debt limit of the taxing or borrowing authority of the community in which such shortage exists, the Federal Works Administrator will be authorized, among other things, to make loans or grants, or both, to public and private agencies to provide the needed public works. The term "private agency" is defined in the law to mean any private agency no part of the net earnings of which inures to the benefit of any private shareholder or individual. No department or agency of the United States, the law provides, may exercise any supervision or control over any hospital or other place for the care of the sick, which is not owned and operated by the United States, with respect to which any funds have been or may be expended under the law.

Pursuant to this law, projects have been approved for the construction of additional hospital facilities, health centers and clinics in defense areas in many states. The original appropriation was exhausted in the late fall of last year, and an additional $150,000,000 has been appropriated. Projects are now being approved for construction under the new appropriation.

New Building for Army Medical Library.—On Sept. 24, 1941 the President approved a bill authorizing an appropriation of $4,750,000 to construct a new building for the Army Medical Library and Museum and to purchase a site on which to construct the building. While the new authorization has been approved by the President, the money authorized by the bill must yet be actually appropriated by the Congress before the site can be acquired and the building constructed. Ordinarily when Congress authorizes an appropriation of money for stated purposes, the actual appropriation of that money follows as a matter of routine, but it now seems probable that the construction of the new building faces further delay.

Prostitution Near Military and Naval Establishments.—On July 11, 1941 the President approved a bill prohibiting prostitution within such reasonable distance of military and naval establishments as the Secretary of War and of the Navy shall

determine to be needful to the efficiency, health and welfare of the Army and Navy. The Secretary of War and of the Navy and the Federal Security Administrator are directed to take such steps as they deem necessary to suppress and prevent violations of this law and to accept the cooperation of the authorities of states and their counties, districts and other political subdivisions in carrying out the purposes of the law. It is specifically provided, however, that nothing in the law shall be construed as conferring on the personnel of the War or Navy Departments or the Federal Security Agency any authority to make criminal investigations, searches, seizures or arrest of civilians charged with violations of the law.

Disease Incidence in Railroad Industry.—The Senate on July 22, 1941 agreed to a resolution submitted by Senator Wheeler directing the Railroad Retirement Board to investigate the incidence of injuries and diseases incurred by employees through employment in the railroad industry and the social and economic consequences of such injuries and diseases. The Railroad Retirement Board is to report to the Senate Committee on Interstate Commerce at the earliest practicable time the results of its investigation. The annual report of the Railroad Retirement Board for the fiscal year ended June 30, 1941 indicates that the investigation is under way and that the results when reported to the Senate Committee will provide a basis for legislation on compensation for railroad injuries. The Railroad Retirement Board, with the cooperation of labor and employer organizations, is apparently proceeding to obtain through reports from employers, supplemented by interviews with injured employees, information relating to the following matters: (1) the present cost of industrial accidents to the railroad workers in terms of settlements, judgments, legal fees, court costs, hospital expenses and so on, (2) the estimated cost of a workmen's compensation system and (3) the advantages or disadvantages to the injured employees and to the survivors of deceased employees of the present system of payments for injuries as compared with one or more possible workmen's compensation systems. The Retirement Board has been for some time engaged in the formulation of a workmen's compensation act to apply to employees of the railroad industry, but it is assumed that the completion of the draft will await the results of the investigations now being made.

Federal Aid to Increase Supply of Nurses for Defense.—To provide funds to train nurses to meet the need for competent nursing services in connection with the national emergency, a bill approved by the President on July 1, 1941 authorized an appropriation of $1,200,000. The amount originally appropriated proved to be insufficient, and an additional $600,000 was authorized for use during the remainder of the present fiscal year. In authorizing this additional appropriation the House Committee on Appropriations said that during the first world war there were thirty thousand trained nurses in the military service. Prior to the outbreak of the present war the estimated need for additional nurses for military services was ten thousand five hundred by June 30, 1942. The committee stated that there is already a shortage of nurses for civilian needs and that the additional appropriation will permit training for about two thousand additional student nurses by enabling many schools to admit second classes this year, and to bring forward the admission of more classes to May or June.

Health in Areas Adjoining Military and Naval Reservations and Plants Engaged in Defense Work.—For the fiscal year ending June 30, 1942 the sum of $1,235,000 was made available to the United States Public Health Service to assist state and local health authorities in health and sanitation activities (1) in areas adjoining military and naval reservations, (2) in areas where there are concentrations of military and naval forces, (3) in areas adjoining government and private industrial plants engaged in defense work and (4) in private industrial plants engaged in defense work. Of the total sum appropriated, approximately $980,000, it was contemplated, would be used in emergency health and sanitation activities in mobilization and war industry areas and the rest of the fund, or approximately $255,000, would be used to accelerate the program of the National Institute of Health in its studies and controls of industrial health hazards. As in the case of the appropriation for the training of nurses, the initial appropriation proved to be inadequate and an additional $1,295,000 was made available, principally for malaria control work in the vicinity of concentrations of military and naval personnel. In connection with this supplemental appropriation the Surgeon General of the Public Health Service was authorized to engage in emergency health and sanitation activities in defense areas "independently of the state and local authorities." The original appropriation for these activities was made available to enable the Surgeon General of the Public Health Service to assist state and local health authorities.

Employment of Osteopaths as Interns in Army Hospitals.—A bill making appropriations for the military establishment for the fiscal year ending June 30, 1942, approved by the President on June 30, 1941, contained an appropriation "for the pay of interns who are graduates of or have successfully completed at least four years' professional training in reputable schools of medicine or osteopathy and not to exceed $720 per annum each period." The intern system in Army hospitals was inaugurated shortly after the first world war in order to act as a means of securing physicians for the regular medical corps. In the fall of each year selections are made from fourth year medical students, and internships are offered in army hospitals to the selectees, each of whom is required to agree that following internship he will accept a commission and will serve for at least three years. The inclusion of the authority to appoint osteopaths as interns was objected to by the War Department on the ground that even if such appointments were made from schools of osteopathy the appointees could not qualify after the internship for commissions in the Medical Corps because they did not meet existing standards. On the recommendation of the War Department the Senate Committee on Appropriations deleted all reference to osteopaths in this particular provision, but on the floor of the Senate the deleted matter was reinserted.

Hospital Facilities for Veterans.—During the past twenty-two years the government has made available a total of $208,723,029 for the construction of hospital and domiciliary facilities for veterans. As of June 30, 1941 there were 61,849 hospital beds under the control of the Veterans' Administration. On the completion of new construction for which funds were available on June 30, 1941 there will be 63,791 hospital beds for veterans. During 1941 the sum of $3,500,000 was made available for additional construction of hospital facilities and for major improvements at existing facilities. The current annual report of the Veterans' Administration points out that since June 7, 1924, when hospitalization was first authorized for veterans of all wars without regard to the origin of their disabilities, 1,548,675, or about 78 per cent of all admissions, have been for the treatment of disabilities not connected with service.

During the Seventy-Seventh Congress there have been introduced to date some eighteen bills proposing the construction of new veterans' hospitals in designated localities or proposing additions to existing institutions. No action has been taken on any of these bills. Another bill, H. R. 6241, introduced on Dec. 15, 1941 by Representative Rogers of Massachusetts, proposes to authorize such sums as may be necessary to provide sufficient hospital and outpatient dispensary facilities to care for the "rapidly increasing load of disabled veterans" and to enable the Veterans' Administration to care for its beneficiaries in veterans administration facilities rather than in contract temporary facilities and other institutions. This bill is pending in the House Committee on World War Veterans' Legislation. Furthermore, the Independent Offices appropriation bill for the fiscal year ending June 30, 1943, H. R. 6430, which has now passed the House, carries an item in the amount of $4,557,000 for major reconditioning, replacements and new construction of hospitals and domiciliary facilities for veterans. In the course of the hearing on this bill a question arose concerning hospital care of service men participating in the present war. In discussing this question the Administrator of Veterans' Affairs said that there has been much talk concerning the necessity of instituting immediately a large hospital building program and that Congress will undoubtedly be importuned by the veterans of the first world war to provide additional hospital beds at once. These veterans, General Hines stated, fear that the demands for hospitalization on behalf of the men serving in the present conflict will take priority over the hospitalization needs

of veterans of the first world war who are now or may hereafter be hospitalized because of nonservice disabilities. General Hines further said that Congress will be faced with a demand to hospitalize the veterans of the present war on the same basis as veterans of the first world war, that is, for service connected and non-service connected disabilities. The administrator advised against any hasty action in legislating for the second group at the present time. He forecast, however, that eventually hospitalization must be provided for the two groups on the same basis. With nearly eight thousand vacant beds in veterans' hospitals at the present time, however, General Hines did not feel that he could advocate the provision of any considerable number of additional beds immediately.

Chiropractors and United States Employees' Compensation Act.—A subcommittee of the House Committee on the Judiciary on Nov. 19, 1941 recommended to the full committee that the Tolan bill, H. R. 1052, be approved, to authorize chiropractors to treat the beneficiaries of the United States Employees' Compensation Act. The full committee has taken no action on the recommendation of its subcommittee.

Amendments to Soldiers' and Sailors' Civil Relief Act.—This act applies generally to transactions originating prior to its approval date, Oct. 17, 1940. One bill, S. 1842, which has been reported to the Senate with recommendations that it pass, proposes to amend the act to extend its benefits to mortgages and instalment contracts originating subsequent to the date named. A companion bill, H. R. 6521, is pending in the House Committee on Military Affairs. The original act provides no relief in connection with leases for offices. A pending bill, S. 1569, which has passed the Senate, provides, among other things, for the termination of any lease covering premises occupied for professional purposes, where the lease has been executed on his own behalf by any person who is in military service by virtue of the provisions of the Selective Training and Service Act or of the joint resolution under which the President was authorized to call out the reserve units. Any such lease, the bill provides, may be terminated on thirty days' notice in writing delivered to the lessor by the lessee. Both the Senate bill and a companion bill, H. R. 4936, are pending in the House Committee on Military Affairs.

Amendments to Social Security Act.—Beginning with the report of the Technical Committee on Medical Care, proposals have been repeatedly advanced to provide federal aid in making disability payments to persons unemployed by reason of illness. The national health bill, sponsored by Senator Wagner several years ago, contained such a proposal. The annual reports of the Social Security Board and the testimony of its chairman before Congressional committees have emphasized the initial recommendation made by the Technical Committee. Whenever the proposal has heretofore been advanced, however, it has been definitely associated with plans to provide medical care to the sick workman to expedite his return to work and thus lessen the period for which cash disability benefits are required.

On Jan. 7, 1942 President Roosevelt in his budget message to the second session of the Seventy-Seventh Congress recommended "an increase in the coverage of old age and survivors' insurance, addition of permanent and temporary disability payments and hospitalization payments beyond the present benefit programs, and liberalization and expansion of unemployment compensation in a uniform national system." While the President made no reference to medical benefits, his recommendation must be considered against the background of governmental points of view expressed during recent years. It merits careful consideration. No bill has yet been introduced to translate the budget proposal into law, and until the details of that bill are known the proposal can be considered only with respect to its general implications. Some of these implications were referred to in an editorial that appeared in THE JOURNAL on March 7: "Disability Insurance and Hospitalization Benefits."

Bills are pending in the Congress awaiting action proposing to extend the federal old age and survivors' insurance benefits of the Social Security Act to certain employees of religious, charitable, scientific, literary or educational organizations, to extend aid to the physically handicapped, to provide financial assistance or other assistance including medical and dental aid to needy transients, and proposing in other ways either to broaden the base of the act to include other beneficiaries or to provide additional benefits for employees now coming within the scope of the act. One resolution, introduced by Representative Celler of New York, proposes to create a committee of five members of the House of Representatives to study, investigate and report to the House on the proposals that have been made for amendment of the Social Security Act.

STATE LEGISLATION

The legislatures of forty-three states met in regular session in 1941. A brief reference to the more important laws, from the medical point of view, that were enacted in 1941 follows:

Basic Science Laws.—A basic science law was enacted in New Mexico requiring all applicants for licenses to practice any form of the healing art, before presenting themselves to their respective professional boards for examination and licensure, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology to be given by a board of basic science examiners. This board consists of one doctor of medicine, one osteopath, one chiropractor and "two laymen learned in the basic sciences." A basic science bill passed both houses in Tennessee by substantial majorities but was vetoed by the governor the same day the legislative session ended, thus precluding any efforts to pass it over his veto. The Arkansas Basic Science Act was so amended as to exempt from its provisions "any person who was a resident practitioner of chiropractic on January 15, 1940, and to whom a license to practice chiropractic was issued by the State Board of Chiropractic Examiners prior to that date," thus, in effect, legalizing licenses which had been issued by the chiropractic board to persons who did not possess certificates from the basic science board.

Medical Practice Acts.—Amendments were adopted to the medical practice acts of Arkansas, California, Colorado, Connecticut, Florida, Missouri, Nebraska, New York, North Carolina, Oklahoma, Pennsylvania, Washington and Wisconsin. Of particular interest are provisions that will require licensed physicians in Arkansas, Oklahoma and Washington to register annually with their respective licensing boards and to pay an annual registration fee. Another Arkansas amendment authorizes the court in which a physician is convicted of a crime involving moral turpitude to revoke or suspend his license to practice in the state. At least six different bills to amend the medical practice act were enacted in California, one of them exempting physicians serving in the armed forces from the payment of the required annual registration fee and another authorizing the revocation or suspension of the license of a licentiate who fails to use his name in connection with any "advertising of the medical business." A new Colorado law provides for the discontinuance of the licensing of midwives. The new Connecticut law, among other things, clarifies and simplifies the procedure in disciplinary actions. The Florida amendment eliminated those provisions of the prior law that required that of the ten members of the board of examiners five members should be "allopaths," three "eclectics" and two "homeopaths." The New York amendment exempts from the act a physician employee of the United States Veterans Administration while in the performance of his official duties. The North Carolina amendment provides specifically that any person practicing radiology, as defined, shall be deemed to be practicing medicine. Radiology was then defined to include the use of the fluoroscope, radium or roentgen ray for the purpose of examination, demonstration, diagnosis or treatment. The new Pennsylvania law amends the medical practice act in several important respects. Among other changes it redefined the practice of "medicine and surgery" as "the art and science having for object the cure of diseases of and the preservation of the health of man, including all practice of the healing art with or without drugs except healing by spiritual means or prayer." The term "healing art" was also defined as "the science of diagnosis and treatment, in any manner whatsoever, of disease or any ailment of the human body."

Cult Practice Acts.—A new Arizona law provides a separate practice act for the osteopaths, who are hereafter to be examined and licensed by an independent osteopathic board. Under the

prior law, osteopaths were licensed under the medical practice act by the board of medical examiners. Amendments to existing osteopathic practice acts were enacted in Arkansas, Georgia, North Dakota, Vermont and Wisconsin. The Georgia amendment specifically confers on osteopaths the right to utilize narcotic drugs in connection with their practice. The North Dakota amendment requires an osteopath to renew his license annually and conditions renewal on the payment of a fee of $3 and proof that in the preceding year he has attended at least two days of the annual educational program and meeting conducted by the state osteopathic association, or its equivalent. The Vermont amendment requires osteopathic applicants to have graduated at schools of osteopathy after a four years course of nine months each rather than after a three years course of nine months each, as the previous law required. The Wisconsin amendment will require after June 1948 that applicants for licenses to practice osteopathy and surgery, in addition to present requirements, present satisfactory evidence of having completed two years of college work including physics, chemistry, biology and English in an institution accredited by the University of Wisconsin.

Existing chiropractic practice acts were amended in North Dakota, Oregon and Tennessee. The Oregon amendment, among other things, specifically proscribes the practice of naturopathy by chiropractors and imposes additional requirements on applicants for licenses. In Tennessee the amendment will permit chiropractors to palpate, analyze and adjust by hand tissues adjacent to the spinal column in addition to articulations of the spine. It provides too, as does the North Dakota amendment, that annual renewal of a license is to be conditioned on proof that the holder has attended in the preceding year the educational program arranged by the state chiropractic association.

In South Carolina a new law permits naturopaths to "use and practice phytotherapy [sic], minor surgery, obstetrics and gynecology, autotherapy and biologicals."

Medical Service Plans.—New California, Massachusetts and Ohio laws authorize nonprofit corporations to establish and operate voluntary nonprofit medical service plans whereby medical services will be provided at the expense of such corporations to such persons or groups of persons as subscribe to plans which entitle each subscriber to certain professional services by licensed physicians and surgeons in their offices, in hospitals and in the home.

Hospital Service Plans.—Laws were adopted in Kansas, Minnesota, Nebraska and North Carolina to permit nonprofit corporations to operate hospital service plans whereby hospital care may be provided by the corporations or by hospitals with which they have contracts for such care to persons who subscribe to plans which entitle each subscriber and his dependents to certain hospital care.

Premarital Examination Laws.—Laws were enacted in Iowa, Maine, Ohio, Utah and Vermont to require each party to a proposed marriage as a condition precedent to obtaining a license to marry to present a physician's certificate that he or she is free of syphilis or is not in a stage of that disease that can be transmitted to the marital partner. The Utah law in addition requires each party to be free from any venereal disease in a communicable stage. A bill similar to the Utah law was vetoed by the governor of Wyoming. A new Massachusetts law requires each applicant for a license to marry to present a physician's certificate that he has examined the applicant for evidence of any infectious disease declared by the state department of health to be dangerous to public health and that he has informed both parties to the proposed marriage of any disease detected. However, even if such a disease is found the parties may marry.

Antepartum Examinations.—Laws were enacted in California, Connecticut, Missouri, Nevada, Oregon, Utah, Vermont and Wyoming requiring a physician or other person engaged in the antepartum care of a pregnant woman, or attending at the time of delivery, to obtain a specimen of her blood at the time of the first professional visit or within ten days thereafter and to submit it to an approved laboratory for a standard serologic test for syphilis.

Narcotic Drugs.—What is cited as the Uniform Narcotic Drug Act was enacted in Maine in 1941. A similar bill was killed in New Hampshire.

The Uniform Narcotic Drug Acts of Arkansas, Florida, Iowa, Maryland, Minnesota, Montana, Nebraska, New York, Oregon, Rhode Island, South Dakota, Tennessee, Texas and Wisconsin were so amended as to provide that the act shall not apply to administering, dispensing or selling at retail any medicinal preparations that contain in 1 fluidounce or, if a solid or semi-solid preparation, in 1 avoirdupois ounce, not more than 1 grain of codeine or any of its salts. Under the Uniform Narcotic Drug Act a preparation is exempted if it does not contain in the quantities referred to more than 2 grains of opium, ¼ grain of morphine, 1 grain of codeine or ⅛ grain of heroin. The Tennessee amendment also exempts preparations in the quantities stated that do not contain more than 2 grains of opium.

Summary

***Medicolegal Abstracts.*—A third volume of Medicolegal Abstracts, including those that appeared in The Journal from 1936 to 1940 inclusive, is in the course of preparation and will be published soon.**

***Taxation of Accounts Receivable.*—Under existing law, the estate of a physician may be subject to strain to pay income tax for the year of the physician's death because of the fact that uncollected accounts must be included as income. The Treasury Department has recommended that Congress relieve the estates of taxpayers of this burden by changing the law so as to make the outstanding accounts on the books of a taxpayer at the time of his death taxable as collected.**

***Protection of Civil Rights of Persons in Military Service.*—As more physicians enter military service, the provisions of the Soldiers' and Sailors' Civil Relief Act of 1940 assume greater importance to the profession. The broad purpose of this act is to free persons in military service from harassment and injury to their civil rights during the term of military service and thus to enable them to devote their entire energy to the defense needs of the nation. Pending legislation proposes further to extend the benefits of the act.**

***Priorities and Medical Practice.*—War has made it necessary that supplies of essential materials be preserved to promote the national welfare. That necessity has brought in its wake a scarcity of certain materials for civilian use. Provision has been made, however, for the release of material for the production of equipment essential to the delivery of adequate medical care to the civilian population. Physicians have been given a preferred classification in the distribution of automobile tires, but only to the extent that such tires are needed in serving patients.**

***Adequacy of Supply of Narcotics.*—The United States Commissioner of Narcotics believes that the supply of narcotics on hand is sufficient to meet demands until 1945 but expresses concern over the extent to which paregoric is being used by narcotic addicts. He forecasts a shortage in that drug if this trend is not halted and proposes that sales of paregoric be limited to sales on prescription.**

***Court Decisions of Medical Interest.*—The United States Supreme Court holds that physicians who dispense attenuated narcotic preparations need keep no record of the transaction. That court also focused attention on the requirement that accounts on the books of a physician at the time of death are taxable under the income tax law. The Supreme Court of Nebraska clarified the law of that state with respect to the scope of osteopathy. The Supreme Court of California upheld the action of a component county medical society in expelling a member for infraction of the rules of professional conduct adopted by the society.**

***Federal Legislation.*—A law has been enacted to safeguard the users of insulin. This legislation was necessary because of the expiration of the insulin patent under**

which adequate standards of purity and strength of the preparation had been maintained.

The sum of $300,000,000 was made available for the construction of community facilities in defense areas, including hospitals, clinics and sanatoriums.

While an appropriation has been authorized to construct a new building for the Army Medical Library and to purchase a site, the authorized sum has not been made available. Indications are that the completion of plans for the new building will be deferred until after the present emergency.

The better control of the incidence of venereal diseases among the armed forces was the objective of a law prohibiting prostitution within such reasonable distance of military and naval establishments as the Secretary of War and of the Navy shall determine to be needful to the efficiency, health and welfare of the Army and Navy.

The Railroad Retirement Board, under a resolution adopted by the Senate, is investigating the incidence of injuries and diseases incurred by railroad employees. The information is being assembled to form the basis of workmen's compensation legislation covering employees of the industry.

Federal appropriations have been made available to train additional nurses to meet the needs of the emergency and to enable the Public Health Service, either independently or in cooperation with local health authorities, to engage in health and sanitation activities in defense areas.

The employment of osteopaths as interns in army hospitals was authorized, but the War Department has not yet availed itself of that privilege. A subcommittee has recommended favorably a bill to permit chiropractors to treat beneficiaries of the United States Employees' Compensation Act, but the full committee has not followed the recommendation of its subcommittee.

Demands persist for the construction of additional hospital facilities for veterans. Seventy-eight per cent of all admissions to veterans' hospitals since 1924 have been for treatment of disabilities not connected with the service.

The budget message of the President recommended disability and hospitalization payments to workmen unemployed by reason of illness. No bill has yet been introduced to translate this recommendation into legislation, but it merits careful consideration against the background of prior governmental points of view expressed during recent years associating the supplying of medical care with the granting of temporary disability benefits during illness. Bills are pending to broaden the base of the Social Security Act to include employees now excluded and to grant additional benefits to employees now covered by the act.

State Legislation.—A new basic science act was enacted in New Mexico. The legislature of Tennessee passed such an act, but it was vetoed by the governor. The basic science act of Arkansas was amended to exempt chiropractors who were licensed prior to Jan. 15, 1940.

Medical practice acts were amended in Arkansas, California, Colorado, Connecticut, Florida, Missouri, Nebraska, New York, North Carolina, Oklahoma, Pennsylvania, Washington and Wisconsin. A new osteopathic act was enacted in Arizona, and existing acts were amended in Arkansas, Georgia, North Dakota and Vermont. Amendments to the chiropractic acts were enacted in North Dakota, Oregon and Tennessee and to the naturopathic practice act in South Carolina.

Laws to authorize medical service plans were enacted in California, Massachusetts and Ohio, and similar enabling laws were enacted in Kansas, Minnesota, Nebraska and North Carolina to authorize the operation of hospital service plans.

Premarital examination laws were enacted in Iowa, Maine, Massachusetts, Ohio, Utah and Vermont. Antepartum examination laws were enacted in California, Connecticut, Missouri, Nevada, Oregon, Utah, Vermont and Wyoming.

A uniform narcotic drug act was enacted in Maine. The narcotic laws of Arkansas, Florida, Iowa, Maryland, Minnesota, Montana, Nebraska, New York, Oregon, Rhode Island, South Dakota, Tennessee, Texas and Wisconsin were amended to bring within the purview of such acts the attenuated narcotic preparations with the exception of preparations that contain in 1 fluidounce or, if a solid or semisolid preparation, in 1 avoirdupois ounce, not more than 1 grain of codeine or any of its salts.

Bureau of Medical Economics

The census of physicians for the Committee on Medical Preparedness, assigned to the Bureau of Medical Economics in June 1940, continued to engage the entire time of most of the Bureau staff during 1941. The most essential work in medical economics was carried on by one associate, one stenographer and one clerk with some assistance from other personnel. The urgent demands of the medical preparedness program precluded the development of much new work in medical economics and created difficulty in maintaining the routine of the Bureau.

SURVEY OF MEDICAL PERSONNEL

The census of physicians began in June 1940. By July 16, 1940 medical preparedness schedules had been mailed to all physicians in the United States and its dependencies whose addresses were available. At this time 179,796 physicians were asked to provide the Committee on Medical Preparedness with information that could be used to classify physicians for military, civilian and industrial medical care.

Subsequent to the original mailing, approximately 6,000 schedules were sent to recently graduated or licensed physicians and others who for one reason or another were not included in the first mailing. Thus, a total of about 185,800 physicians received medical preparedness schedules. By Dec. 31, 1941 approximately 158,000, i. e. about 85.8 per cent of the total number of those who received schedules, had filled in the information and returned the schedules to the Committee on Medical Preparedness in Chicago.

Since it was necessary to have a punch card of information for each known physician in the United States and its dependencies, the 85.8 per cent return left the original task 14.2 per cent short of completion. It was evident at about the middle of 1941 that some physicians for various reasons would not provide the committee with the desired information, and arrangements were made to prepare incomplete schedules for all who did not fill out a schedule themselves. Some of these incomplete schedules were filled in by the secretarial staffs of state or county medical societies, but most of them were prepared in the Bureau of Medical Economics.

At the close of 1941, either a complete schedule had been received or an incomplete schedule had been prepared for every known physician in the United States and its possessions. All these schedules have been edited and coded and the information placed on punch cards.

The original list is being revised continuously by the addition of the names of new physicians and the removal of the names of deceased physicians. Other revisions that must be made continuously are changes of physicians' qualifications and addresses and the designation of physicians who have been placed on active duty with the armed forces.

An extremely important service in connection with the census of physicians is the voluntary work of many prominent physicians who have quietly but painstakingly assembled confidential information relative to the professional qualifications of both specialists and general practitioners. This work has been completed for nearly 100,000 physicians and will continue until all lists have been completed. Because of the highly confidential nature of this information, these reports will not be published or made available for any except official purposes.

SPECIAL LISTS

Some of the lists that have been and are now being prepared for use in connection with military and civilian medical services are:

Specialists by states.
General practitioners by states.
Commissioned officers by states and corps areas.
Negro physicians by states.
Specialists by year of birth and states.
An alphabetical listing of all physicians.
A geographic listing of all physicians.

Other lists that are being maintained for use in connection with Medical Preparedness and the Procurement and Assignment Service are:

Essential members of the faculties of medical schools.
Physicians reported by county and state medical societies as essential for the maintenance of the health of the local communities.
Physicians now on active duty with the armed forces arranged by the states from which they entered the service.
Refugee physicians.
Graduates of unapproved medical schools.
Physicians serving in some capacity with the Selective Service System.
Changes of addresses.

Since all these lists require continuous checking and change, it should be evident that the census process is a continuing one which must be maintained to provide the latest and most reliable data pertaining to physicians in the work of procuring, assigning and conserving the medical resources of the United States.

The accumulation of data pertaining to the medical profession was undertaken primarily to provide information that would be useful to the Army and Navy in securing commissioned medical personnel. To accomplish this purpose it became necessary to secure lists of commissioned medical officers on duty and information from the surgeon generals of the Army and Navy to show the estimated requirements of commissioned medical personnel, the number and names of physicians who had been ordered to extended active duty and the names of physicians who had been considered for commissions but who, for some reason, had been rejected. It became necessary also to secure interpretations of and changes in regulations, copies of directives, and comments on policies of the medical departments of both the Army and the Navy.

Any report concerning the medical preparedness activities of the American Medical Association as conducted through the Bureau of Medical Economics would be incomplete and lacking in appreciation if it failed to acknowledge the complete, free and sympathetic cooperation that has been given by the surgeon generals of the Army and Navy and their administrative staffs and by other officials of the federal government.

COOPERATION WITH THE PROCUREMENT AND ASSIGNMENT SERVICE

In October 1941 the President of the United States approved the creation of the Procurement and Assignment Service as a part of the Office of Defense Health and Welfare Services. The function of the service is stated as follows:

The function of this office shall be to procure personnel from existing qualified members of the professions concerned. The office shall receive from various governmental and other agencies requests for medical, dental and veterinary personnel. These requests shall indicate the number of men desired, the time during which they must be secured, the qualifications and limitations placed on such personnel.

The office must then by appropriate mechanism arrange to secure lists of professional personnel available to meet these requirements, utilizing such existing rosters, public and private, as it may find acceptable. It shall also be authorized to approach such professional personnel as is considered to be available and to use suitable means to stimulate voluntary enrolment.

The board shall be authorized to establish such advisory committees and subcommittees as may be necessary. These committees shall represent the various interests concerned, such as medical, dental and veterinary schools, hospitals, Negro physicians, women physicians, etc. Members of such committees shall serve without salary but shall be entitled to actual and necessary transportation, subsistence and other expenses incidental to the performance of their duties.

To enable the Procurement and Assignment Service to utilize fully the information assembled in the census of physicians by the Committee on Medical Preparedness of the American Medical Association, the Directing Board of the Procurement and Assignment Service established a consultant office at the headquarters of the American Medical Association in Chicago, and Dr. Rosco G. Leland was appointed as supervisor of the consultant office.

Since the establishment of the Procurement and Assignment Service many lists of physicians' names have been sent to the consultant office for checking and clearance. These names are checked for race, year of birth, school and year of graduation, specialty, if any, and personal information. Information is provided when records indicate that the individual is not a doctor of medicine.

Requests have been received for complete lists of specialists. The preparation of all such lists is extremely time consuming, since the names must first be selected from among all thus far listed and then checked for all available information, after which the latest known addresses are supplied. In many instances it is necessary to trace a physician through four or more directory reports of change of address to supply the last known address. Every possible method of shortening the process of checking has been devised, but the preparation of special lists still consumes an enormous amount of time and it is done as expeditiously as is possible.

PREPAYMENT MEDICAL SERVICE PLANS

At the 1941 session of the House of Delegates, consideration was given to a recommendation relative to the establishment by the Bureau of Medical Economics of some method of coordination and interchange of material pertinent to the administration of prepayment plans for medical care sponsored by medical societies. An additional member of the staff of the Bureau was secured for this purpose.

Forms for the collection of experience data from prepayment medical care plans were developed and used in one state in 1939. In August 1941 these forms were revised and sent to the administrative officers of the prepaid medical care organizations sponsored by medical societies, with the request that suggestions for any changes in the forms be returned to the Bureau. The suggestions that were received were incorporated in further revisions of the forms, which were again distributed about the middle of December 1941 to the officers of the medical care plans for further study and comment.

The purpose of these forms was set forth in an explanatory statement which accompanied them and also in the letter of transmittal, and they were finally prepared for use.

As rapidly as experience data are received by the Bureau, they will be analyzed, consolidated and prepared for use by medical societies that contemplate the development of similar prepaid medical services. The Bureau of Medical Economics will then become a clearing point for factual data pertaining to organization, administration, types of coverage, incidence of demand for service, costs and methods of payment of services made available on a prepayment basis and sponsored by medical societies.

The tendency toward the inclusion of medical services in group hospitalization plans has been discussed in previous reports of this bureau. Proposals for ward care plans and for the consolidation of medical services and group hospitalization plans have been offered. These matters will, no doubt, be subject to careful study and consideration by the House of Delegates.

In most places where medical society sponsored plans have demonstrated a reasonable determination to attempt a solution of the problem of the distribution of medical services to the low income groups, no definite efforts to combine the benefits of medical and group hospitalization contracts have as yet culminated.

The House of Delegates has adopted principles to apply in the organization and administration of medical services and of hospital services. It is believed that these principles are sound and deserve more strict adherence.

No valid reason has been advanced to show that medical service organizations and group hospitalization plans cannot function separately as parallel services in communities that are sufficiently interested to support such efforts.

A new development in the group hospitalization movement is a proposal to make available under the Social Security Act a cash allowance of $3 a day hospitalization benefit to employees

covered by the act who are unemployed because of sickness and who are in need of hospitalization.

The Wagner health bill, intended to implement the national health program, contained a provision to make available benefits to employees during the period of unemployment because of sickness. The House of Delegates, with some limitations as to the method of application, endorsed the principle of insurance against the loss of wages during sickness.

The present proposal has not progressed to a point of definite details that can be discussed specifically. However, this new movement seems to warrant the most careful consideration. It seems proper to inquire at this time whether an entirely new system of hospitalization is to be developed for employees entitled to benefits under the Social Security Act, or whether the present group hospitalization organizations are to be recognized or absorbed and expanded under proposed legislative enactments.

INDEX AND DIGEST OF OFFICIAL ACTIONS

In response to a demand for a convenient abstract of the official actions of the House of Delegates consolidated by subjects to include several years, the first edition of the Index and Digest of Official Actions of the American Medical Association was published in March 1934. This edition covered the years 1904 to 1933 inclusive. A supplement for the years 1934-1936 inclusive was published in 1937. A second supplement for the years 1937-1939 was published in 1940.

Although the arrangement of the material in each published group was alphabetical by subjects, the inconvenience and impracticability of assembling the abstracts in an ever increasing number of supplements became very clear. Accordingly, in 1941 all material that had been published, including the actions at the 1941 session of the House of Delegates, was rearranged and assembled in one volume arranged alphabetically. This volume comprises three hundred and twenty pages cut and punched to fit the loose-leaf binders that have been provided for the original publications. The new material, which is now ready for distribution, will be substituted for the sheets that are now being used.

It is recommended that in the future the Index and Digest be published in volumes rather than supplements, which accumulate as parts of one volume. The present rearranged sheets, which include the years 1904-1941 inclusive, would become volume I. Volume II would begin with the actions of the 1942 session and extend as far in the future as it seemed advisable, depending on the amount of material included in the Digest. Such an arrangement would facilitate the use of the material since the volumes would be kept small, but the arrangement in each volume would be similar.

PROGRAM OF FARM SECURITY ADMINISTRATION

A statement from Dr. R. C. Williams, chief medical officer in charge of the medical program for the Farm Security Administration, indicates that at present there are medical care plans sponsored by the Farm Security Administration operating in more than nine hundred counties in thirty-seven states. That program involves more than one hundred thousand families and includes more than half a million persons.

Quoting from Dr. Williams' statement:

> As a result of much study and extended conferences, the desire has been expressed in several areas to undertake a program in an average rural county that would secure reasonably adequate medical care for all farm families in the county who desire to participate in the group medical care plan. Although, in general, any such experimental program would be patterned after the plan developed by the Farm Security Administration in cooperation with the organized medical profession, the program would endeavor to provide more complete care, including the correction of chronic physical handicaps that interfere with farm or household work, and a limited amount of dental service. . . .
>
> The thought is that the experimental county program would be a voluntary health insurance plan for all farm families in the county. This plan would be worked out between the county agricultural planning committee and the county medical society.

This proposal deserves the most careful consideration on the part of the House of Delegates, since it involves several subjects that have been previously considered but under somewhat different circumstances.

Such a program also deserves careful study in the light of some reports from rural areas to the effect that conditions within those areas have changed in recent months and because of these changes, which appear to be improvements, emergency measures in the distribution of medical services do not appear to be longer needed.

PUBLICATIONS

During 1941 two of the publications of the Bureau were entirely rewritten. These titles are "Health Insurance in England" and "Basic Principles of Medical Economics." One publication, "Organized Payments for Medical Services," was completely revised.

Summary

In 1941 the medical preparedness work required the entire time of most of the personnel of the Bureau of Medical Economics. The initial part of the census of physicians was completed. There are now available for use 181,530 punch cards, which carry a large amount of information pertaining to the physicians of the United States. The census requires a continuing process to keep the information as nearly up to date and accurate as possible.

The Procurement and Assignment Service was created by order of the President in October 1941. The organization of this service included a consultation office at the headquarters of the American Medical Association in Chicago. Dr. R. G. Leland was appointed supervisor of the consultant office.

In compliance with the action of the House of Delegates in 1940, an additional member of the staff of the Bureau was secured and forms have been devised and put in use to secure data pertaining to the operation of medical service plans sponsored by medical societies.

The Index and Digest of Official Actions of the American Medical Association has been brought up to date in a single volume arranged alphabetically to include the original volume and the three supplements.

Developments in the field of group hospitalization have shown definite proposals to consolidate medical service contracts and group hospitalization contracts.

A proposal has been made to modify the Social Security Act to make available to employees covered by the act a cash benefit of $3 a day hospitalization allowance. The details of this proposal are still too meager to permit any detailed discussion.

The Farm Security Administration medical care program is now operating in more than nine hundred counties in thirty-seven states. Benefits of this program are available to more than five hundred thousand persons. Reports seem to indicate that in some communities changed conditions make the need for such programs less urgent than they were some time ago.

Bureau of Investigation

The Bureau of Investigation has continued to play its part in the educational activities of the American Medical Association. The work of the Bureau consists primarily in receiving and dispensing information concerning so-called patent medicines, quackery, frauds and faddists.

INQUIRIES RECEIVED

Approximately ten thousand inquiries were submitted to the Bureau during the year covered by this report. These inquiries came from physicians, individual laymen, governmental agencies, Better Business Bureaus, commercial organizations, newspapers, radio stations and high school and college students.

The number of inquiries received from physicians has gradually decreased within the last three or four years. Four thousand such inquiries were received by the Bureau in 1938, while there were only two thousand five hundred in 1941. It is presumed that the decrease in the number of inquiries received annually from physicians is due to the fact that, under the provisions of laws enacted within the last few years, active ingredients of products for which claims of therapeutic efficiency are made must be declared on labels, and thus it is no longer necessary for physicians to inquire as they formerly did with respect to the composition of such products.

There has been a constant increase in the number of inquiries received from teachers and students. In 1940 the number of such inquiries was more than twice the number received in the preceding year, and this level was maintained in 1941. The explanation seems to be that high schools and colleges throughout the country have developed "consumer studies" to a rather remarkable extent. In 1939 inquiries from students represented 12 per cent of the total number presented to the Bureau, whereas in 1941 such inquiries represented 27 per cent of the total. It is gratifying to note that the interest of students in high schools and colleges has been so greatly aroused and that the Bureau of Investigation is being given opportunity to contribute to the education of the younger groups of the population with respect to the dangers of fraud and quackery in medicine.

Inquiries from newspapers, magazines, government agencies and Better Business Bureaus have been constant in amount during the last several years. In numerous instances, questions submitted to the Bureau pertain to more than one subject. Those subjects about which most inquiries are received are so-called cures for cancer, epilepsy and diabetes, coal tar drugs, cathartics and products widely advertised as being effective in the treatment of colds. A relatively large number of inquiries pertain to the activities of individuals and groups who resort to the use of more or less sensational advertising methods.

OTHER ACTIVITIES

The Bureau of Investigation has prepared a considerable amount of material for publication in THE JOURNAL. Some three thousand of the Bureau's pamphlets were distributed during the year. Lantern slides and a film strip of available slides have been supplied for use for educational purposes by physicians, teachers and others.

The Director of the Bureau during the year delivered addresses before fourteen lay audiences and professional groups under the sponsorship of medical societies and of state or county auxiliaries of the Woman's Auxiliary to the American Medical Association.

The Bureau of Investigation has cooperated as fully as opportunity has offered with agencies of the federal government, including the Federal Trade Commission, the Food and Drug Administration and the Postoffice Department.

Summary

The Bureau of Investigation continued during 1941 to play its part in the educational activities of the American Medical Association.

Approximately ten thousand inquiries from physicians, laymen, governmental agencies, Better Business Bureaus, commercial organizations, newspapers, radio stations and high school and college students were submitted to the Bureau in 1941. The number of inquiries received from physicians has gradually decreased within the last few years, but there has been a constant increase in the number of inquiries received from teachers and students. The subjects about which inquiries were most numerous during the year were so-called cures for cancer, epilepsy and diabetes, coal tar drugs, cathartics and products widely advertised as being effective in the treatment of colds.

Approximately three thousand of the Bureau's pamphlets were distributed during the year, a considerable amount of material was prepared for publication in The Journal, and lantern slides and a film strip of available slides were supplied to physicians, teachers and others on request. The Director of the Bureau addressed a number of audiences during the year.

The Bureau of Investigation has cooperated at every opportunity with various agencies of the federal government.

Bureau of Exhibits

The activities of the Bureau of Exhibits during 1941 comprised the Scientific Exhibit at the annual session; exhibits from Association headquarters shown at various state medical meetings and other scientific organizations; exhibits for the public at state fairs, expositions and similar public gatherings, and motion pictures. The year 1941 marked the first time in a decade when the Bureau was not preparing or maintaining an exhibit at a world's fair.

THE SCIENTIFIC EXHIBIT

The installation of the Scientific Exhibit at the Cleveland session in 1941 was the most attractive in many years. New booth equipment, a new color scheme and fluorescent lighting added materially to the attractiveness of the display, while the commodious hall allowed ample space for the free movement of visitors. Likewise the caliber of the exhibits presented, the energy and perseverance of the demonstrators and the enthusiasm of the visiting physicians attested the high place which the Scientific Exhibit has reached as an instrument in graduate medical education.

There were three hundred and ten signed applications for exhibit space at the Cleveland session, of which one hundred and sixty-nine were accepted. Sixteen sections of the Scientific Assembly were all represented, the largest number of exhibits presented by any one section being twenty-six and the smallest number five.

One of the features of the Scientific Exhibit was a group of exhibits on national defense and war medicine, which was popular as well as timely.

The special exhibit on fractures was carried on under the direction of the same committee as previously, of which Dr. Kellogg Speed, Chicago, was chairman. The special exhibit on lame backs, somewhat larger than in the previous year, was presented for the second time under the auspices of the same committee, of which Dr. Frank R. Ober, Boston, was chairman.

The so-called educational group of exhibits consisting of presentations shown in the names of various national organizations and government agencies was eliminated for the first time in many years. At the Cleveland session each exhibit in this group was shown in the name of the person who demonstrated the exhibit.

Motion pictures were eliminated from the booths of the exhibitors at the Cleveland session and were shown in motion picture theaters only. Six motion picture theaters were maintained simultaneously and continuously throughout the week, with chairmen to introduce physicians who wished to explain their pictures and professional operators to project the films. The pictures were shown once each day.

The Committee on Awards, of which Dr. Walter M. Simpson, Dayton, Ohio, was chairman, worked faithfully and well, spending long hours each day visiting the exhibits and deciding the awards. The number of awards given this year totaled forty: two gold medals, two silver medals, two bronze medals, twelve certificates of merit and three special mentions.

ASSOCIATION EXHIBITS

There are thirty-nine exhibits available for loan purposes, of which fifteen are serviceable primarily for medical societies and scientific groups, eighteen for fairs and expositions and other public gatherings and six for either group with minor variations on emphasis. During 1941 thirteen exhibits were discontinued and seven new exhibits added. Exhibit material was sent out on one hundred and twenty-one occasions, the total number of exhibits being two hundred and twenty-four, since in some instances more than one exhibit was sent. In two states, California and Nebraska, the exhibits were used at numerous county fairs under the auspices of the respective state medical associations, considerably increasing the number of showings mentioned. The medical group of exhibits was sent out on fifty occasions, while those for the public were sent out on seventy-one occasions. The exhibits were shown in thirty states and the District of Columbia.

In accordance with the resolution adopted by the House of Delegates at the New York session of the American Medical Association in 1940, there has been active cooperation between the Bureau of Exhibits and the various health museums over the country. Exhibit material has been lent on a temporary or a semipermanent basis during the year to the museums in Cleveland; Chicago; Toledo, Ohio; Grand Rapids, Mich.; Newark, N. J.; Pittsburgh; Madison, Wis., and New York City. At the Chicago Museum of Science and Industry and at the Cleveland Health Museum a question and answer service was main-

tained, the answers to the questions being sent out by mail from the Bureau of Health Education of the American Medical Association.

MOTION PICTURES

There are twenty-three motion pictures available for loan purposes from the American Medical Association. Two new pictures were added during the year. Films were sent out to thirty states and to the District of Columbia, Hawaii and Canada on two hundred and seven occasions. In many instances two or more pictures were sent to the same place. The pictures were often shown to several audiences before they were returned, considerably increasing the number of showings. Requests for information concerning motion pictures were numerous, and an endeavor was made to inform the inquirers where pictures on certain subjects could be obtained.

Summary

The Scientific Exhibit at the Cleveland session in 1941 was notable for its attractiveness and for the high caliber of the exhibits presented. There were one hundred and sixty-nine individual exhibits and two special exhibits on fractures and lame backs. Six motion picture theaters were in continuous operation.

The loan exhibits of the Association number thirty-nine. They were sent out on one hundred and twenty-one occasions, the total number of exhibits being two hundred and twenty-four, since more than one exhibit was sent to some places.

Museums have been the recipients of health exhibits on a temporary or semipermanent basis. Question and answer services are maintained at the Chicago Museum of Science and Industry and at the Cleveland Health Museum.

There are twenty-three motion pictures in the loan collection of the Association, which are in constant demand. They were sent out to thirty states and to the District of Columbia, Hawaii and Canada on two hundred and seven occasions. In many instances two or more pictures were sent to the same place. Hundreds of requests for information concerning motion pictures on particular subjects were received.

Medicine and the War

Every officer, council, bureau and department of the American Medical Association, indeed the entire personnel of the headquarters office, are participating in the war effort of the nation. The publications of the Association, particularly THE JOURNAL, HYGEIA and WAR MEDICINE, are devoting largely of their space to the contribution of medicine in the war.

COMMITTEE ON MEDICAL PREPAREDNESS AND PROCUREMENT AND ASSIGNMENT SERVICE

The Committee on Medical Preparedness of the American Medical Association met in Washington, D. C., Aug. 19 and 20, 1941 to consider the resolution adopted by the House of Delegates at the annual session in Cleveland relative to the establishment of a procurement and assignment agency, to be concerned with the provision of medical personnel for the Army, Navy, Public Health Service and other governmental agencies. The committee at that time considered also other problems of medical service, including the inventory of the medical profession, deferment of medical students, interns and residents, provision of personnel for Selective Service boards and rehabilitation. In association with the committee at that time were representatives of the office of the Federal Security Agency, the U. S. Public Health Service, the Health and Medical Committee, the Selective Service System, the surgeon generals of the Army and Navy, and representatives of the personnel divisions of the Army and Navy medical departments.

Following these preliminary considerations, the director of the Office of Defense Health and Welfare, Mr. Paul V. McNutt, called a meeting under the auspices of the Health and Medical Committee, of which Dr. Irvin Abell, chairman of the Committee on Medical Preparedness of the American Medical Association, is also chairman. The Health and Medical Committee, by executive order of the President, Sept. 3, 1941, advises the director of the Office of Defense Health and Welfare regarding the health and medical aspects of national defense exclusive of medical research and assists in the coordination of health and medical activities affecting national defense. The director of the Office of Defense Health and Welfare is also authorized to appoint advisory committees and subcommittees with respect to particular aspects of health, welfare, nutrition, recreation and related activities.

On Oct. 22, 1941 the Health and Medical Committee called a conference of representatives of all government services with representatives of the Committee on Medical Preparedness of the American Medical Association and various other agencies to consider the action taken by the House of Delegates of the American Medical Association, to wit: "That the United States government be urged to plan and arrange immediately for the establishment of a central authority with representatives of the civilian medical profession, to be known as the Procurement and Assignment Agency for physicians for the Army, Navy and Public Health Service and for the civilian and industrial needs of the nation." At this time a commission was appointed which included the President of the American Medical Association and the Editor of THE JOURNAL among others. This commission recommended the establishment of a procurement and assignment service and outlined the procedure for its establishment. On Oct. 30, 1941 a letter from Mr. Paul V. McNutt, director of the Office of Defense Health and Welfare, to the President was approved by the President and constitutes the authority under which the Procurement and Assignment Service operates.

The chairman of the Directing Board of the Procurement and Assignment Service is the President of the American Medical Association, Dr. Frank H. Lahey. The establishment includes a consultant office in the headquarters of the American Medical Association under the supervision of Dr. R. G. Leland. It includes also nine corps area committees with their offices. The chairmen of these corps area committees have been selected in most instances from the membership of the Committee on Medical Preparedness of the American Medical Association. Officials of the Association are active also in the work of the advisory committees.

Following a conference held in Chicago, arrangements were made to supply to the National Roster of Scientific and Specialized Personnel copies of the punch card system developed in the headquarters of the American Medical Association covering the medical profession. A consultant committee to the National Roster includes Drs. Morris Fishbein, R. G. Leland and Olin West.

Following the declaration of war against Japan and Germany, an immediate expansion of the military-naval services was undertaken with increased demand for the enlistment of members of the medical profession. Publication in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of two special enrolment blanks brought to the Procurement and Assignment Service the names of more than twenty-five thousand physicians who indicated that they would, when notified, apply at once to the Procurement and Assignment Service for commissioning in the Army. By the utilization of these twenty-five thousand replies the immediate needs of the Army and Navy Medical Departments for physicians have been satisfied. During the first week in April 1942 the new enrolment form and questionnaire prepared by the board of the Procurement and Assignment Service and by the National Roster of Scientific and Specialized Personnel was circulated to all the licensed physicians of the United States.

In the functioning of the Procurement and Assignment Service the county and state medical societies and corps area committees act to ascertain the essential character of the services done by physicians in various parts of the country and to advise the Procurement and Assignment Service and the Selective Service boards as to the necessity of such services. Through the consultant office in the headquarters office of the American Medical Association the information there available regarding individual physicians is also supplied to the Procurement and Assignment Service and to the personnel division of the medical departments of the Army and the Navy. The Division of Medical Sciences of the National Research Council through its con-

sultant committees has aided in the evaluation of the physicians who specialize with relation to appointments in the Army and Navy medical departments requiring specialistic service.

PHYSICIANS FOR BRITAIN

Early in 1941 the President of the United States requested a number of medical organizations, including the American Medical Association, to aid the American Red Cross in its effort to comply with the request of the British Red Cross for one thousand physicians to reinforce the British medical services, including the Royal Army Medical Corps and the Emergency Medical Service. The offices of the American Medical Association aided in extending this request to the medical profession and in informing the public about the work to be done. Through the lists available in the headquarters office of the American Medical Association, the names of all physicians under 35 years of age were supplied, and to each of those eligible was sent an application blank. When the United States entered the war in December 1941 this project was considered completed. Indeed, arrangements were made by the medical department of the British army to release to the American army those men who had been assigned to this service, the number being somewhat over one hundred. Twelve women physicians who had been sent to Great Britain are continuing their work in the British medical services.

THE SELECTIVE SERVICE

Up to February 1942 more than twenty-eight thousand physicians had enrolled with various phases of the work of the Selective Service. In the department of THE JOURNAL devoted to Medicine and the War, all official bulletins of the Selective Service System directed especially to the medical profession have been given circulation.

Special consideration has been given to the proposal for prehabilitation of registrants. Information has also been supplied relative to projects for rehabilitation.

At the meeting of the secretaries and editors of state medical societies, Brig. Gen. Lewis B. Hershey, director of the Selective Service System, expressed the appreciation of the Selective Service for the cooperation of the medical profession. He said "I do not possess control of the English language adequate to tell you what the work of anywhere from twenty thousand to fifty thousand of the medical profession of America has done in the last year in Selective Service. . . . I do believe you occupy a peculiar position in the minds of the people. . . . You still do have some of that combination that came from long ago when the medicine man was something a little more than a human being."

Officials of the American Medical Association, including the President, Dr. Frank H. Lahey, the Secretary and General Manager, Dr. Olin West, and the Editor, Dr. Morris Fishbein, attended a conference called by the Selective Service System to consider the possibility of a program for rehabilitation of rejected selectees. The views there expressed have been significant in guiding the development of this project. Eventually such rehabilitation was begun as an experiment in the states of Maryland and Virginia. The offices of the American Medical Association have been of service to the Selective Service System in the listing and evaluation of physicians who are cooperating in the rehabilitation program.

INFORMATIONAL SERVICES

The Library of the American Medical Association, in association with the Editorial Department, has made available to the Medical Department of the U. S. Army foreign and domestic medical periodicals, books and other informational material concerning the medical facilities and the health conditions of various sections of the world into which the Army and Navy of the American government may be sent.

Through the current medical literature department, under Dr. George Halperin, complete bibliographies and abstracts concerned especially with medical problems of aviation, chemical warfare, shock and similar subjects have been prepared. These have been supplied to the special committees of the Office of Scientific Research and Development and of the Division of Medical Sciences of the National Research Council for use in the work which they are conducting. Much of this abstract material is also made available to the medical profession generally and particularly to the military services through WAR MEDICINE.

CIVILIAN DEFENSE

The offices of the American Medical Association have cooperated fully with the United States Office of Civilian Defense in the extension of information to the medical profession as to its participation. The special medical bulletins of the United States Office of Civilian Defense have been published in full in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Officials of the Association have on many occasions consulted with Dr. George Baehr, chief medical officer, and with other officials of the Office of Civilian Defense. By action of the Board of Trustees Miss Lois Stice, for several years news editor of publicity assistant in the Editorial Department, was lent to the Office of Civilian Defense to aid in medical extension and has now been associated with that work for almost a year. The offices of the Secretary of the Association have been utilized by the Office of Civilian Defense in special mailings of informational material directly to the officers of state and county medical societies for use by the Office of Civilian Defense in extending its work to the medical profession of the nation.

PERSONNEL OF THE HEADQUARTERS OFFICE

The personnel of the headquarters office of the Association has been rendering many services to governmental agencies in connection with the war effort:

Dr. Olin West, Secretary and General Manager of the American Medical Association, has acted as secretary of the Committee on Medical Preparedness of the American Medical Association, consultant to officials of the Selective Service System and the Office of Defense Health and Welfare, and member of consultant committee, National Roster of Scientific and Specialized Personnel.

Dr. Morris Fishbein, Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, has served as chairman of the Committee on Information, Division of Medical Sciences, National Research Council, consultant to the Medical Committee, Office of Scientific Research and Development, consultant to the Selective Service System and Office of Defense Health and Welfare, chairman of the Committee on Information, Procurement and Assignment Service, editor of WAR MEDICINE and vice chairman of the Medical Committee, Civilian Defense, City of Chicago.

The Bureau of Exhibits has been cooperating with various governmental agencies in the development of exhibits for demonstration at the Atlantic City session in 1942. The director of the Bureau, Dr. Thomas G. Hull, is a member of the Medical Advisory Committee of the Illinois State Council of Defense.

The Council on Industrial Health has been cooperating with the Subcommittee on Industrial Health and Medicine of the Health and Medical Committee in the Office of Defense Health and Welfare. Plans have been developed for coordination of various activities in the field of industrial health for the conservation of personnel, for the stimulation of essential research and for the correlation of regional, state and local agencies concerned with civilian defense and committees on industrial health of state and county medical societies. Information is being disseminated among industrial plants on organization for medical and other services required by sabotage, bombing or other catastrophies.

The Biographic Department and the Bureau of Investigation of the American Medical Association have been developing important information regarding physicians and other personnel in the medical services.

The Bureau of Legal Medicine and Legislation has served in an advisory capacity to several federal agencies with relation to the analysis of laws relating to medical licensure and the acceleration of medical education. A special statement has been developed regarding the civil rights of physicians when they enter military service. The Bureau has also conferred with the War Production Board with reference to priorities for medical equipment.

The Bureau of Health Education has contributed radio programs dealing specifically with medical service in industry

and civilian services for a nation at war. Other broadcasts have concerned nutrition and housing problems in war. Emphasis has been placed on the President's May Day proclamation calling for immunization against smallpox and diphtheria. A special outline and bibliography have been prepared on nutrition for the use of the Woman's Auxiliary in the promotion of classes in nutrition. The following pamphlets have been reprinted from HYGEIA and are being widely circulated as a part of the educational program:

Our Selectees Are Healthier, by Lieut. Col. A. C. Koontz.
Health at the Crossroads, by M. R. Kinde.
How Well Do You Know Your First Aid? by K. F. Wells.

The Council on Pharmacy and Chemistry has been of assistance to several agencies in conferences regarding the supply of drugs and in determining which drugs are of established therapeutic value. Several members of the Council have carried the work of the Council directly to some of the consultant committees of the National Research Council. Indeed, practically all the members of this council cooperate with federal agencies and coordinate the work of the Council with governmental projects.

The Council on Foods and Nutrition has also aided through its members in the work of various agencies of the Army and Navy and the National Research Council. The Council has cooperated in the development of recommended daily allowances of dietary essentials and gave its support to the National Nutrition Conference for Defense. Special reports have been issued on nutritionally improved or enriched flour and bread and on the indiscriminate administration of vitamins to workers in industry. Nine of the members of the Council are also members of the Food and Nutrition Board of the National Research Council. One of the members serves as head of the Specifications and Test Unit, Standards Section, of the Office of Price Administration in Washington. The Secretary of the Council, Dr. F. C. Bing, devotes time to service on the Subcommittee on Vegetables, Fats and Fruits and also on the Executive Committee of the Food and Nutrition Board of the National Research Council. He serves also as consultant to the Vitamin Division of the Food and Drug Administration and is on a Chicago committee on nutrition. Another member of the Council's staff, Dr. W. B. Bradley, is on the Victory Garden Committee of the Chicago area.

The Council on Physical Therapy has prepared a Handbook on Amputations and has cooperated with the Subcommittee on Physical Therapy of the National Research Council in the preparation of a Manual of Physical Therapy.

The Department of Press Relations of the headquarters office aids in the dissemination of information to both the medical profession and the public on the Procurement and Assignment Service for Physicians, Dentists and Veterinarians. The head of this department is also active on the publicity committee for the Emergency Medical Services of the Office of Civilian Defense in Chicago. A special edition of the AMERICAN MEDICAL ASSOCIATION NEWS containing abstracts of articles and announcements in WAR MEDICINE is developed by this department for each issue of WAR MEDICINE.

The Bureau of Medical Economics, which was designated to conduct a census of physicians for the Committee on Medical Preparedness, now has a complete alphabetical listing of 181,530 physicians, representing the original circularization of schedules to physicians of the United States and its dependencies. This process is a continuing one in which the names of deceased physicians are removed, the names of new physicians are added, the locations of physicians are changed and the qualifications are modified to represent the most recent and authentic information concerning the physician. The present activities in connection with the census of physicians and all the lists that have been prepared therefrom consist in clearing the names of physicians that are received from the Procurement and Assignment Service. Between Jan. 3 and March 23, 1942 inclusive the Bureau processed for the Procurement and Assignment Service the names of 7,132 physicians. In addition to the lists of names that have been processed, a large number of names have been submitted by telegraph for immediate clearance. The Bureau has also prepared lists of specialists for use in connection with the rehabilitation program administered by the Selective Service System. More than 5,619 names have been processed and placed on state lists for this purpose. The lists of physicians prepared for use in connection with the Selective Service System rehabilitation program must of necessity be incomplete at the present time, since as yet not all the specialists in the United States have been listed, and names must now be drawn from incomplete lists. The process of preparing these lists is further complicated by the fact that not all physicians on the listing sheets are rated, and it is necessary for the director to enter the rating according to the information that has been supplied. On some of the lists the rating was supplied by the committee that entered the information.

In cooperation with the United States Army, the United States Navy and the Selective Service System, the Council on Medical Education and Hospitals has assisted in securing deferment of medical students and premedical students who are matriculated in approved medical schools until completion of their undergraduate studies and one year of internship. Believing that the further education of a certain number of physicians is vital to the future welfare of the country, the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals have appointed a committee whose chief purpose is to formulate plans whereby a percentage of interns may be given an opportunity to continue their training in the special fields of medicine.

Every effort is being made by the Council in connection with the acceleration of the medical curriculum to speed the production of physicians. For this purpose a liaison committee of the Council and the Association of American Medical Colleges has been appointed. While the Council is of the opinion that the adoption of a program for an accelerated curriculum for approved medical schools is a decision which should be determined by each medical school, it stands ready to assist the individual schools in the reorganization of the undergraduate curriculum to maintain adequate standards of medical education.

In cooperation with the Procurement and Assignment Service the faculties of medical schools have been classified with respect to availability for medical service in national defense. At the request of the War Department, the Council requested all medical schools to advise faculty members considered necessary for the operation of a medical school that they should not serve as a member of an affiliated hospital unit.

In response to a telegram from Dr. George Baehr, medical officer, Office of Civilian Defense, dated Dec. 10, 1941, letters, together with bulletins on national defense, were sent to all hospitals having over twenty-five beds. This was done within twenty-four hours after Dr. Baehr's request was received.

The acute shortage of physical therapy aides reported by the Central Physical Therapy Board of the Office of the Surgeon General of the U. S. Army is being studied by the Council in an effort to determine the number available for service or in training. In this connection the Council has assisted in the establishment of concentrated courses to accelerate production of physical therapy personnel. Aside from the physical therapy studies, the Council has investigated the availability and made an inventory of technical personnel in all hospitals in the United States. This study covers laboratory and x-ray technicians, dietitians, pharmacists, medical record and other librarians, medical stenographers, occupational therapists, dental hygienists and social service workers.

In relation to civilian defense, the Council has studied the availability of blood and plasma banks in hospitals approved for intern training and residencies in specialties.

The Council on Medical Education and Hospitals is represented on the National Committee on Education and Defense, a committee sponsored by the American Council on Education and the National Education Association.

Summary

Every officer, council, bureau and department of the American Medical Association and every member of the headquarters personnel is participating in the war effort of the nation.

***Committee on Medical Preparedness.*—This committee met with representatives of various government agencies**

in Washington, D. C., Aug. 19 and 20, 1941, to consider the resolution adopted by the House of Delegates at the Cleveland session relative to the establishment of an agency for the procurement and assignment of medical personnel for the Army, the Navy, the Public Health Service and other government services.

On Oct. 22, 1941 the Health and Medical Committee of the Federal Security Agency called a conference of representatives of all government services with representatives of the Committee on Medical Preparedness and various other agencies. At this meeting a commission was appointed which recommended an outline of procedure for the establishment of the Procurement and Assignment Service. The President of the United States on Oct. 30, 1941, authorized the establishment of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians under the Office of Defense Health and Welfare Services, of which Mr. Paul V. McNutt is director. The chairman of the directing board of the Procurement and Assignment Service is the President of the American Medical Association, Dr. Frank H. Lahey. The Service includes a consultant office in the headquarters of the American Medical Association under the direction of Dr. R. G. Leland, nine corps area committees and various advisory committees.

Arrangements have been made to supply the National Roster of Scientific and Specialized Personnel, cooperating with the Procurement and Assignment Service, with copies of the punch cards covering the medical profession that have been developed at Association headquarters.

Two special enrolment blanks recently published in The Journal brought to the Procurement and Assignment Service the names of more than twenty-five thousand physicians who indicated that, when notified, they would apply at once for commissions, and the immediate needs of the Army and Navy medical departments have thus been satisfied.

Physicians for Britain.—During 1941 the American Medical Association, at the request of the President of the United States, aided materially in extending to the medical profession the request of the British Red Cross, through the American Red Cross, for one thousand physicians to reinforce the British medical services. When the United States entered the war this project was considered completed, and arrangements were made by the medical department of the British army for the release of more than one hundred American physicians who had been assigned to this service. Twelve American women physicians are continuing their work in the British service.

Selective Service.—Up to February 1942 more than twenty-eight thousand physicians were enrolled in various phases of the work of the Selective Service System. Officials of the American Medical Association attended a conference called by the director of the Selective Service System to consider a possible program for the rehabilitation of rejected selectees. Experimental effort in this direction was begun in Maryland and Virginia.

Civilian Defense.—The American Medical Association has cooperated fully with the Office of Civilian Defense in the extension of information to the medical profession.

Headquarters Personnel.—The Secretary and General Manager of the Association, Dr. Olin West, the Editor of The Journal, Dr. Morris Fishbein, and the Director of the Bureau of Medical Economics, Dr. R. G. Leland, have personally rendered a great deal of service to governmental agencies in connection with the war effort.

The Bureau of Exhibits, the Council on Industrial Health, the Biographic Department, the Bureau of Investigation, the Bureau of Legal Medicine and Legislation, the Bureau of Health Education, the Council on Pharmacy and Chemistry, the Council on Foods and Nutrition, the Council on Physical Therapy, the Department of Press Relations, the Bureau of Medical Economics and the Council on Medical Education and Hospitals have each cooperated in every possible manner with every government department and have contributed specifically and materially to the furtherance of the nation's war effort.

Committee on American Health Resorts

A meeting of the Committee on American Health Resorts held in January 1941 resulted in decisions to proceed with the preparation of rules for listing acceptable health resorts and the publication of these rules when approved by the Board of Trustees, the preparation of scientific articles to be published in THE JOURNAL and the gathering and compiling of information. An informal conference of members of the Committee was held at Cleveland during the American Medical Association meeting in June.

WORK OF THE COMMITTEE

The office work of the Committee is supervised by Dr. W. W. Bauer, Director of the Bureau of Health Education. During the first six months of 1941 this work consisted largely in the writing of follow-up letters to health resorts in an effort to get as high a percentage of returns as possible from the preliminary questionnaires sent out and in compiling and summarizing information.

Six hundred forty-five questionnaires were sent to an equal number of institutions believed to exist. Of these, two hundred and seventy-seven were returned mostly in a state of incompleteness necessitating much additional correspondence. In the case of two hundred and fifty-eight institutions to which questionnaires were sent, it was developed through various sources that they either had been closed or were not operating as health resorts or, for other reasons, should not be included in the list of institutions possibly eligible for inclusion in a register which might be compiled under the proposed rules of the Committee.

The following analysis concerning medical direction in health resorts has been made:

	Class 1 *	Class 2 †	Class 3 ‡
Medical direction (resident)	32	2	3
Medical direction (nonresident)	24	0	0
Physicians available	34	1	1
The number of institutions which require a prescription from a physician or a bath permit	14	.	.

* Institutions which employ mineral water, mud or both for treatment purposes (these may also employ mineral water for therapeutic drinking in addition).

† Institutions which employ mineral waters for therapeutic drinking only.

‡ Institutions which use the Battle Creek system or a similar system plus climate and sunshine as natural resources—no mineral water, and so on.

RULES OF THE COMMITTEE

The following rules and explanatory matter have been adopted by the Committee and approved by the Board of Trustees:

Recognizing the value of those phases of medical treatment included under the general classification of health resort or spa treatment such as climate, thermal and mineral waters, sea water and peloids (muds) the House of Delegates of the American Medical Association in 1938 authorized the appointment of a Committee on American Health Resorts. This Committee was accordingly appointed by the Trustees.

This Committee first prepared a questionnaire which could be sent to known health resorts asking for information as to their natural therapeutic resources and domiciliary and recreational facilities and, more important, the medical facilities available and the medical supervision of the use of therapeutic facilities available.

A list of health resorts was then compiled from various sources including books, government publications, the records of the American Congress on Physical Therapy, tourist guides and miscellaneous sources.

Through an extensive survey by questionnaire and correspondence a comprehensive list was developed of health resorts in the United States including those with and without medical facilities.

The Committee next proceeded to establish and define certain minimum fundamental standards which would assure the safe and successful use of natural therapeutic resources according to established scientific procedure. These standards have been expressed in the rules, which are subject to modification as experience indicates.

The Committee now plans to offer an opportunity to American health resorts to apply for a listing which the Committee proposes to compile. This listing will include health resorts which comply with the rules of the Committee. Application blanks will be furnished on request addressed to the Committee on American Health Resorts, American Medical Association, 535 North Dearborn Street, Chicago.

On receipt of an application properly filled out the Committee will, with all possible promptness, cause inspection to be made of the applicant's premises and will make such other investigations as the Committee may deem advisable. A report will be compiled, submitted to the applicant and published. If the applicant is found to comply with all the

rules of the Committee, the name of the health resort will be included in the Committee's list during such time as compliance with the rules of the Committee continues.

When any modifications of the rules are deemed necessary, those resorts already listed under rules as previously adopted will be notified promptly and will be given reasonable opportunity to comply with the modified ruling or voluntarily to withdraw from the listing.

RULES

Object of Rules.—The following rules with such amendments as may be added from time to time have been adopted by the Committee on American Health Resorts of the American Medical Association with the primary object of identifying for the medical profession and the public those health resorts which are shown by investigation of their location, climate, personnel and management to merit recognition by the medical profession.

Definition.—A health resort is defined as "an institution which gives major attention to the use of the special climatic and other natural therapeutic resources including mineral waters, peloids, etc., with which it is endowed by reason of its location." While the use of the natural resources is the prime object or purpose of the institution, other remedies may be applied as an adjunct.

List.—American health resorts which are found by the Committee to conform to the letter and spirit of the following rules will, on application approved by the Committee, be placed on a list to be published by the Committee:

RULE 1. *Application.*—To be considered for inclusion in the Committee's list, formal application must be made to the Committee according to the following formula:

(*a*) Formal application for consideration should be written on stationery of the applying health resort, addressed to the Secretary of the Committee on American Health Resorts, American Medical Association, 535 North Dearborn Street, Chicago.

(*b*) This application should be accompanied by complete information on (1) ownership, (2) personnel, (3) equipment, (4) method of operation, (5) method of promotion.

(*c*) Eight copies each of all recent advertising, descriptive booklets, pamphlets, circulars, promotional form letters and any other promotional matter pertaining to the health value of the resort should be submitted.

(*d*) All correspondence with the secretary should be in duplicate.

RULE 2. *Claims and Advertising.*—The claims made for a resort must be acceptable to the Committee, and all advertising material must be presented with applications. A resort will not be listed or retained if the management makes unwarranted, exaggerated or misleading statements in any of its advertising.

RULE 3. *Medical Supervision.*—Medical supervision must meet with the approval of the Committee and must be of such character as to place proper safeguards about the patient to protect him from mistreatment or dangerous treatment. Institutions which permit attendants or technicians to alter or supplement a physician's prescription or to prescribe treatment without restrictions or medical supervision will not be listed. An institution applying for listing will be scrutinized most carefully as to the character of the safeguards placed about the patient by way of medical supervision and the efficiency and good faith with which the rules governing these needs are enforced.

RULE 4. *Inspection.*—An institution which makes application cannot be given formal consideration until it has been inspected by an inspector designated for the purpose by the Committee.

RULE 5. *Removal from List.*—If in the opinion of the Committee a listed institution fails to live up to the letter and spirit of these rules or engages in practices contrary to established scientific procedure, the Committee may remove the institution from the list.

RULE 6. *Committee's Decision Final.*—In making application for inclusion in the Committee's list, the applicant agrees that final decision as to listing, nonlisting or subsequent removal shall rest with the Committee.

SCIENTIFIC PAPERS

Titles were chosen and authors invited to prepare a series of papers on health resorts and health resort therapy for publication in THE JOURNAL, and work on these papers is now going forward.

APPLICATION BLANKS

A supply of application blanks to be used by institutions making formal application for listing under the rules of the Committee has been printed and is on hand for distribution as soon as the rules of the Committee have been published.

The Committee on American Health Resorts is composed of Dr. Walter S. McClellan, Acting Chairman, Dr. Euclid M. Smith, Dr. M. B. Jarman, Dr. W. Paul Holbrook and Dr. Frank H. Krusen.

Committee to Study Air Conditioning

The Committee to Study Air Conditioning has as its chief function the continuous appraisal of developments and publications in the field of air conditioning as related to health and the interpretation to the medical profession of their significance. An attempt is made to limit the committee's activities to air conditioning in its strictest sense, but inevitably its work extends into the related fields of ventilation, air exhaust systems, aerial bacteriology, and so on.

During the period covered by this report the chief activity of this committee has been the compilation and digestion of all available records and reports on air conditioning and closely related topics for the five year period ended Jan. 1, 1941. Similar compilations for the year 1941 are now in progress. By classification this committee has available in abstract form extensive material related to all commoner aspects of air conditioning, including such items as ozone in air conditioning, infection in relation to air borne organisms, ventilation of air raid shelters, ventilation of mines, air conditioning of naval vessels and air conditioning of windowless structures. Although no policy exists at this time for ways and means for making such materials available to individual physicians or groups, it is the desire of the committee to cooperate with all physicians through the furnishing on request of whatever materials may be at hand on any specific topic associated with air conditioning.

From time to time the committee, as such or through its members as individuals, prepares timely material on air conditioning, as represented by the article on "The Importance of Clothing in Air Conditioning" by C. P. Yaglou and Anne Messer published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in October 1941. Under some circumstances the committee will sponsor the publications of noncommittee members when it may be determined that the contents of such publications serve the purposes of the committee in the guidance of the medical profession in air conditioning developments and practices.

Respectfully submitted.

CAREY P. MCCORD, Chairman.
WALTER M. SIMPSON.
C. P. YAGLOU.

Committee to Study the Relationship of Medicine and Law

In accordance with the provisions of the resolution submitted to the House of Delegates at the Cleveland session by Dr. W. G. Phippen, delegate from Massachusetts, and approved by the House of Delegates, a Committee to Study the Relationship of Medicine and Law has been appointed. The members of this committee are Dr. Alan R. Moritz, chairman, Boston; Dr. Harrison S. Martland, Newark, N. J.; Dr. E. R. Cunniffe, New York City, and Mr. J. W. Holloway Jr., Chicago.

This committee has held one meeting with members of the Committee on Medico-Legal Problems of the American Bar Association, and progress already has been made toward carrying out the intent of the resolution adopted by the House of Delegates.

Proposed Committee to Confer with Specialty Boards

The resolution submitted to the House of Delegates at the Cleveland session by Dr. L. G. Christian, delegate from Michigan, providing for the appointment of a committee to confer with specialty boards, has received consideration, first by the Executive Committee of the Board of Trustees and later by the Board as a whole.

In view of the nature of conditions created by the war emergencies and because the methods adopted by some of the special boards have undergone changes and apparently are subject to further change, the Board of Trustees believes it to be inexpedient to appoint a committee at this time for the purpose indicated in the resolution. It may be desirable, when conditions created by present emergencies have ceased to exist, that such a committee can be appointed with the expectation that more effective plans pertaining to the certification of specialists can be devised.

The United States of America versus the American Medical Association and the Medical Society of the District of Columbia

An appeal was taken in the case of the United States versus the American Medical Association and the Medical Society of the District of Columbia from the verdict rendered after trial before the District Court of the United States for the District of Columbia resulting in a conviction of the American Medical Association and the Medical Society of the District of Columbia. This appeal was heard by the United States Court of Appeals

for the District of Columbia in February 1942. At the time of preparation of this report, no decision has been announced.

Respectfully submitted.

ARTHUR W. BOOTH, Chairman.
ERNEST E. IRONS, Secretary.
R. L. SENSENICH.
WILLIAM F. BRAASCH.
ROGER I. LEE.
ELMER L. HENDERSON.
RALPH A. FENTON.
JAMES R. BLOSS.
C. W. ROBERTS.

ADDENDA TO REPORT OF BOARD OF TRUSTEES

Report of the Committee on Scientific Research for 1941

In 1941 twenty-four grants, amounting to $7,550, were made in response to forty-two applications. There were fewer applications and grants than usual, in both a fall of about 8 per cent as compared with 1940. The work under twenty-seven

Financial Statement for 1941

Balance, Jan. 1, 1941		$ 3,051.60
Appropriation for 1941		13,700.00
Refund, grant 413		153.86
Refund, grant 463		50.00
Refund, grant 512		102.48
Refund, grant 531		41.37
Refund, grant 547		150.00
Refund, grant 563		8.99
Refund, grant 566		2.35
Refund, grant 570		.96
Refund, grant 572		118.90
Refund, grant 589		84.96
Refund, grant 592		5.00
Refund, grant 602		371.34
		$17,841.81

GRANTS AND EXPENSES PAID IN 1941

Grant 599, William H. Welker	$350.00
Grant 600, W. R. Tweedy	125.00
Grant 601, Barnett Sure	600.00
Grant 602, Doran J. Stephens	400.00
Grant 603, Norris J. Heckel	250.00
Grant 604, Hans Popper	350.00
Grant 605, Harry G. Day	400.00
Grant 606, Meyer M. Harris	250.00
Grant 607, Fritz Levy	250.00
Grant 608, Everett I. Evans	500.00
Grant 609, C. E. Cahn-Bronner	300.00
Grant 610, H. O. Burdick	125.00
Grant 611, M. R. Todd	200.00
Grant 612, Roland K. Meyer	500.00
Grant 613, Robert W. Virtue	200.00
Grant 614, George Gomori	400.00
Grant 615, Frederick M. Allen	500.00
Grant 616, Robert S. Dow	250.00
Grant 617, Mary Juhn	500.00
Grant 618, H. M. Weaver	200.00
Grant 619, Paul Thomas Young	500.00
Grant 620, T. T. Chen	150.00
Grant 621, William M. Cahill	175.00
Grant 622, Timothy Leary	75.00
Clerical expense	600.00
Committee expense	280.65
Printing	6.55
	$8,437.20
Balance on hand December 31, 1941	$9,404.61

previous grants is listed as completed, proper reports on results having been published or accepted for publication and full accounts made of the expenditures. The articles now listed do not necessarily cover all the results of the research designated as completed. Additional results may be published long after a grant has been closed on the records of the committee. The work under forty-five grants prior to 1941 is incomplete; in most cases active work is in progress and in many cases reports have been published, while in other cases final publication is under way. Two grants have been closed without any published record of the work, in 1 case on account of technical difficulties, in the other case because the grantee died.

During the year unexpended balances of twelve grants, in all $1,090.21, have been refunded.

The financial summary for 1941 is presented; also brief accounts of the grants closed during the year, of the pending grants from previous years and a list of the grants made in 1941.

Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF THE AMERICAN MEDICAL ASSOCIATION.

LUDVIG HEKTOEN, Chicago, Chairman.
Term expires, 1946.
MARTIN H. FISCHER, Cincinnati.
Term expires, 1945.
N. W. JONES, Portland, Ore.
Term expires, 1944.
JOHN J. MORTON, Rochester, N. Y.
Term expires, 1943.
E. W. GOODPASTURE, Nashville, Tenn.
Term expires, 1942.

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

NEW GRANTS—1941

Grant 599: William H. Welker, University of Illinois College of Medicine, $350, water soluble proteins.

Grant 600: W. R. Tweedy, Loyola University School of Medicine, Chicago, $125, effect of magnesium deficient diet on serum phosphatase activity in albino rat.

Grant 601: Barnett Sure, Agricultural Experimental Station, Fayetteville, Ark., $600, new factor in vitamin B complex essential for reproduction and lactation.

Grant 602: Doran J. Stephens, Strong Memorial Hospital, Rochester, N. Y., $400, effect of undernutrition of guinea pig on thyroid and ovary.

Grant 603: Norris J. Heckel, Rush Medical College, Chicago, $250, effect of sex hormones on seminal fluid.

Grant 604: Hans Popper, Cook County Graduate School of Medicine, Chicago, $350, study of vitamin A and lipoids by fluorescence microscopy.

Grant 605: Harry G. Day, Indiana University, $400, physiologic significance of zinc.

Grant 606: Meyer M. Harris, Psychiatric Institute, New York, $250, food factors in muscular disease.

Grant 607: Fritz Levy, Davis Memorial Hospital, Elkins, W. Va., $250, study of marrow cells.

Grant 608: Everett I. Evans, Medical College of Virginia, $500, problems in surgical shock.

Grant 609: C. E. Cahn-Bronner, University of Illinois College of Medicine, $300, bacterial metabolism.

Grant 610: H. O. Burdick, Alfred University, Alfred, N. Y., $125, the effect of desoxycorticosterone acetate on pregnancy.

Grant 611: M. R. Todd, University of Oregon Medical School, $200, the physiologic effects of canine distemper vaccine.

Grant 612: Roland K. Meyer, University of Wisconsin, $500, antihormones.

Grant 613: Robert W. Virtue, University of Denver, $200, formation of cholic acid.

Grant 614: George Gomori, University of Chicago, $400, enzymes in tissue sections.

Grant 615: Frederick M. Allen, New York Medical College, $500, reduced temperatures in surgery.

Grant 616: Robert S. Dow, University of Oregon Medical School, $250, effects of clotting in cerebral veins.

Grant 617: Mary Juhn, University of Maryland College of Medicine, $500, tests of applicability of feather germ reaction to tumor diagnosis.

Grant 618: H. M. Weaver, Wayne University College of Medicine, $200, pain on distention of the stomach.

Grant 619: Paul Thomas Young, University of Illinois, $500, appetites and food preferences in the rat.

Grant 620: T. T. Chen, University of California, $150, illustrations of malarial parasites.

Grant 621: William M. Cahill, Wayne University College of Medicine, $175, self selection of food in relation to tumor growth.

Grant 622: Timothy Leary, Medical Examiner's Office, Boston, $75, cost of extra illustrations for article on atherosclerosis, *Arch. Path.* **32**:1507, 1941.

STATE OF WORK UNDER PREVIOUS GRANTS

1. COMPLETED DURING THE YEAR

Grant 410, 1936: H. E. Eggers, University of Nebraska, $200, effect of tetramethylarsonium gluconate on human cancer. Eggers, H. E.: On Specific Chemotherapy for Cancer, accepted for publication by the *Nebraska State Medical Journal.*

Grant 413, 1936: Philip Levine, Newark Beth Israel Hospital, Newark, N. J. $350, bacteriophage action in the dysentery group (refund, $153.86). Levine, Philip, and Perlstein, David: Phage-Specific Heat-Labile Factors in B. Dysenteriae, Sonne, *Proc. Soc. Exper. Biol. & Med.* **36**:295, 1937.

Grant 463, 1937: Jay Conger Davis, Minneapolis, $600, action of certain drugs on the coronary arteries (refund, $50). Davis, J. C.: Studies on Effect of Aminophyllin on Coronary Blood Flow, *J. Clin. Investigation* **17:** 511, 1938. See grant 356, 1935.

Grant 498, 1938: Henry Laurens, Tulane University, $351.50, lowering of arterial pressure by carbon arc radiation. See grant 541, 1939. Laurens, Henry, and von Kolnitz, Henry: The Effects of Carbon Arc Radiation on Blood Pressure and Blood Histamine, *M. Rec.* **152:** 209 (Sept. 18) 1940. von Kolnitz, Henry: Blood and Blood Pressure Changes Following Carbon and Irradiation, *Am. J. Physiol.* **129:** 399, 1940.

Grant 499, 1938: Robert W. Virtue, University of Denver, $365, formation of bile acids. Virtue, R. W., and Doster-Virtue, M. E.: Studies on the Production of Taurocholic Acid in the Dog. IV. Cysteine, Homocysteine and Thioglycolic Acid, *J. Biol. Chem.* **128:** 665, 1939; The Failure of Intravenously Injected Fat to Produce Cholic Acid in the Dog, *ibid.* **133:** 573, 1940.

Grant 512, 1938. Barnes Woodhall, Duke University Hospital, $350, reactions to implanted Shope rabbit papilloma by cerebral tissue (refund, $102.48). Woodhall, Barnes; Graves, R. W., and Beard, J. W.: Experimental Production of Tumors of the Brain with the Shope Rabbit Papilloma, *Arch. Surg.* **38:** 457 (March) 1939. Woodhall, Barnes, and Graves, R. W.: Production of Experimental Tumors of the Brain with the Shope Rabbit Papilloma: II, *ibid.* **39:** 1041 (Dec.) 1939.

Grant 524, 1938: Ernest A. Spiegel, Temple University, $300, physicochemical factors influencing the excitability of the central nervous system. Spiegel, E. A., and Wycis, H. T.: Influence of Hypochloremia on the Convulsive Reactivity, *Proc. Soc. Exper. Biol. & Med.* **42:** 400, 1939. Spiegel, E. A. and Spiegel-Adolf, Mona Mechanism of the Therapeutic Effect of Metrazol and Insulin Convulsions, *ibid.* **42:** 834, 1939. Spiegel, E. A.: Comparative Study of the Anticonvulsant Effects of Various Bromides, *Arch. internat. de pharmacodyn. et de thérap.* **63:** 464, 1939. Spiegel, E. A., and Wycis, H. T.: Convulsive Reactivity in Hypercholesteremia, *Confinia Neurol.* **2:** 262, 1941. Spiegel, E. A., and Spiegel-Adolf, Mona: Permeability Changes in the Brain Induced by Metrazol and Insulin Convulsions, *J. Nerv. & Ment. Dis.* **93:** 750, 1941. Spiegel, E. A., and Wycis, H. T.: Convulsive Reactivity in Hypercholesteremia, *Am. J. Physiol.* **133:** 458, 1941. Spiegel-Adolf, Mona, and Spiegel, E. A.: Quantitative Relationship Between Polarizability and Permeability, *Am. J. Physiol.* **133:** 459, 1941.

Grant 531, 1939: L. R. Dragstedt and G. M. Dack, University of Chicago, $600, Bacterium necrophorum (refund, $41.37). Dack, G. M.; Kirsner, J. B., and Dragstedt, L. R.: Intradermal Injection of Bacterium Necrophorum in Patients with Chronic Ulcerative Colitis, *J. Infect. Dis.* **66:** 263, 1940; Chronic Ulcerative Colitis, *Ann. Surg.* **114:** 653, 1941.

Grant 548, 1939: Warren O. Nelson, Wayne University College of Medicine, $300, relation of the thymus gland to growth and development. Segaloff, Albert, and Nelson, W. O.: The Thymus-Adrenal Relationship, *Am. J. Physiol.* **128:** 475, 1940; Growth of Vitamin Deficient Rats Treated with Thymocrescin, *Endocrinology* **26:** 860, 1940; Growth and Development of Six Generations of Albino Rats Under Treatment with Thymocrescin, *ibid.* **27:** 693, 1940; Growth and Development of Six Generations of Thymectomized Albino Rats, *Am. J. Physiol.* **130:** 671, 1940. Segaloff, Albert, and Nelson, W. O.: Treatment of Successive Generations of Rats with Thymus Extract (Hanson) and Related Substances, *Endocrinology* **29:** 483, 1941.

Grant 549: Felix Saunders, University of Chicago, $250, growth requirements of pathogenic bacteria. Dorfman, Albert, Koser, S. A., and Saunders, Felix: Effect of Nicotinamide on Respiration of Dysentery Bacilli, *Science* **90:** 2345, 1939. Koser, S. A.; Dorfman, Albert, and Saunders, Felix: Pyridine Derivatives and Other Compounds as Growth-Promoting Substances for Dysentery Bacilli, *Proc. Soc. Exper. Biol. & Med.* **43:** 391, 1940. Dorfman, Albert, and others: Quantitative Response of Dysentery Bacillus to Nicotinamide and Related Compounds **43:** 434, 1940. Bass, A.; Berkman, Sam; Saunders, Felix, and Koser, S. A.: An Additional Growth Factor Needed by Some Hemolytic Streptococci, *J. Infect. Dis.* **68:** 220, 1941. Bass, A., and others: Growth Factors for Hemophilus Influenzae and Hemophilus Parainfluenzae, *ibid.* **68:** 175, 1941.

Grant 563, 1939: Ben Vidgoff, University of Oregon Medical School, $300, isolation and effect of the inhibitory hormone of the testes on the endocrine glands (refund, $8.99). Vidgoff, Ben, and Vehrs, Herman: Studies on the Inhibitory Hormone of the Testes, *Endocrinology* **26:** 656, 1940. See grant 486, 1938 (Report of Committee for 1939). Vidgoff, B., and Kubin, R.: Effects of Anterior Pituitary-like Substance on Carbohydrate Metabolism Northwest Med. **40:** 361, 1941.

Grant 564, 1939: Robert B. Greenblatt, University of Georgia, $400, influence of gonadotropic preparations on the human ovary. Greenblatt, R. B., and Torpin, R.: The Evaluation of the Various Gonadotropins: Their Application to Female Endocrine Disorders, *J. M. A. Alabama* **9:** 409, 1940. Greenblatt, R. B., and Krafka, J.: Ruptured Human Follicle with Ovum in Situ, *Arch. Path.* **31:** 634, 1941. Greenblatt, Robert B.: Histologic Changes in the Ovary Following Gonadotropin Administration, *Am. J. Obst. & Gynec.* **42:** 983, 1941.

Grant 565, 1939: Alexander S. Wiener, Office of the Chief Medical Examiner, New York City, $200, agglutinogens in human blood and the Kline test. Wiener, A. S., and Peters, H. R.: Hemolytic Reactions Following Transfusions of Blood of the Homologous Group, with Three Cases in Which the Same Agglutinogen Was Responsible, *Ann. Int. Med.* **13:** 2306, 1940. Wiener, A. S., and Silverman, I. J.: Subdivisions of Group A and Group AB, with Special Reference to the So-Called Agglutinogen As, *Am. J. Clin. Path.* **11:** 45, 1941. Candela, P. B.; Wiener, A. S., and Goss, L. J.: New Observations on the Blood Factors in Simidii and Cercopithecidae, *Zoologica* **25:** 513, 1940. Wiener, A. S.: Hemolytic Reactions Following Transfusions of Blood of the Homologous Group: II. Further Observations on the Role of Property Rh, Particularly in Cases Without Demonstrable Isoantibodies, *Arch. Path.* **32:** 227, 1941.

Grant 566: Robert S. Dow, University of Oregon Medical School, $300, vessels in lesions of multiple sclerosis (refund, $2.35). Dow, R. S., and Berglund, George: Vascular Pattern of the Lesions of Multiple Sclerosis, accepted for publication by *Arch. Neurol. & Psychiat.*

Grant, 568, 1940: Fritz Schiff, Beth Israel Hospital, New York, $400, serologic classification of Salmonella. Schiff, Fritz, and Saphra, I.: Variety of Types in Human Paratyphoid C Infections, *J. Infect. Dis.* **66:** 97, 1940; A New Salmonella Type: Salmonella Havana, *ibid.* **68:** 125, 1941.

Grant 572. Committee on Fluoride Intoxication, University of Chicago, $750, bone changes due to fluoride intoxication (refund, $118.90). Hodges, P. C.; Fareed, O. J.; Ruggy, George, and Chudnoff, J. S.: Skeletal Sclerosis in Chronic Sodium Fluoride Poisoning, *J. A. M. A.* **117:** 1938, 1941.

Grant 573, 1940: Louis N. Katz, Michael Reese Hospital, Chicago, $250, factors influencing activities of the heart. Katz, L. N.: Observations on Cardiac Failure and the Mode of Its Production, Publication 13 of American Association for the Advancement of Science, p. 184.

Grant 575, 1940: Doran J. Stephens, University of Rochester, $400, changes in the thyroid gland of undernourished guinea pigs. Stephens, D. J., and Belasco, I. J.: Effect of Undernutrition on Thyroid Tissue Respiration of Guinea Pig, *Proc. Soc. Exper. Biol. & Med.* **45:** 706, 1940.

Grant 578, 1940: L. G. Meduna, Francis Gerty and V. G. Urse, Loyola University, Chicago, $500, biochemical phenomena in schizophrenia. Meduna, L. G.; Gerty, F. J., and Urse, V. G.: Biochemical Disturbances in Mental Disorders: I. Anti-Insulin Effect of Blood in Schizophrenia, accepted for publication by *Arch. Neurol. & Psychiat.*

Grant 580, 1940: Lawrence W. Smith, Temple University, $480, "critical" temperature levels of various neoplastic diseases. Smith, L. W.: The Effect of Lowered Temperatures on the Growth of the Fibroblast in Vitro: Its Application to Wound Healing, *Lab. & Clin. Med.*, to be published; The Behavior of Tumor Cells in Tissue Culture Subjected to Reduced Temperatures, accepted for publication by *Cancer Research.*

Grant 581, 1940: Charles G. Johnston, Wayne University, $285, intestinal obstruction. Johnston, C. G.: Decompression in the Treatment of Intestinal Obstruction, *Surg., Gynec. & Obst.* **70:** 365, 1940. Penberthy, G. C.; Noer, R. J., and Benson, C. D.: Treatment of Adynamic Ileus by Gastro-Intestinal Intubation in Children, *ibid.* **71:** 211, 1940. Penberthy, G. C.; Irvin, J. L., and Tenery, R. M.: Fluid, Salt and Nutritional Balance in Patients with Intestinal Suction Drainage, *Ann. Surg.* **112:** 530, 1940. See Grant 491 (1938) in the report of the committee for 1940.

Grant 586, 1940: Herman Kabat, University of Minnesota, $300, nervous component in traumatic shock. Salzburg, P., and Kabat, Herman: Differential Sensitivity of Sarcoma and Normal Tissues to Temporary Arrest of Circulation, *Arch. Surg.* **42:** 917, 1941. Kabat, Herman, and Freedman, A. M.: Effect of Slowly Absorbed Epinephrine in Experimental Shock, *Proc. Soc. Exper. Biol. & Med.* **46:** 385, 1941. Kabat, Herman, and Hedin, R. F.: The Nervous Factor in Burns, *ibid.* **49:** 114, 1942; Nervous and Toxic Factors in the Etiology of Shock in Burns, *ibid.*, to be published.

Grant 587, 1940: Charles F. Code, University of Minnesota, $100, action of intramuscular injection of desoxycorticosterone and epinephrine in a yellow wax (U. S. P.) mixture. Code, C. F., and others: Prolonged Action of Desoxycorticosterone Acetate, *Am. J. Physiol.* **133:** 240, 1941.

Grant 588, 1940: Owen H. Wangensteen, University of Minnesota, $450, physiologic basis of surgical treatment of duodenal and gastric ulcers. Wangensteen, O. H.: Physiological and Surgical Critique of the Surgeon's Role in the Management of Ulcer (Duodenal and Gastric), *Bulletin of Minnesota Medical Foundation*, November 1940; The Problem of Surgical Arrest of Massive Hemorrhage in Duodenal Ulcer, *Surgery* **8:** 275, 1940; Aseptic Resections in the Gastrointestinal Tract, *Surg., Gynec. & Obst.* **72:** 257, 1941.

Grant 589, 1940: Rucker Cleveland, Vanderbilt University, $400, histology and cytology of endometrium (refund, $84.96) Cleveland, Rucker: Cytologic and Histologic Observations on the Epithelial, Connective and Vascular Tissues of the Endometrium of Macaques Under Various Experimental Conditions, *Endocrinology* **28:** 388, 1941; Experimental Production of Glandular Cystic Hyperplasia in Castrated Macaques, *ibid.*, p. 659; Observations in Hormone Withdrawal Bleeding in Castrated Macaques, *ibid.* **29:** 343, 1941. See also grant 521, 1938 (report of committee for 1940).

Grant 598, 1940: Siegbert Bornstein, Beth Israel Hospital, New York, $350, epidemiology and serology of American Salmonella. Schiff, F.; Bornstein, S., and Saphra, I.: Occurrence of Salmonella O Antigens in Coliform Antigens, *J. Immunol.* **40:** 365, 1940. Bornstein, S.; Saphra, I., and Strauss, L.: Frequency of Occurrence of Salmonella Species, *J. Infect. Dis.* **69:** 59, 1940. Bornstein, S.; Saphra, I., and Daniels, J. B.: The Occurrence of Salmonella Antigens in Dysentery Bacilli, *J. Immunol.* **42:** 401, 1941.

Grant 592, 1940: Wesley W. Spink, University of Minnesota, $120, antistaphylococcic immunity and nutrition of staphylococci. Spink, W. W., and Jermsta, J.: Effect of Sulfonamide Compounds on Growth of Staphylococci in Presence and Absence of p-Aminobenzoic Acid, *Proc. Soc. Exper. Biol. & Med.* **47:** 395, 1941.

Grant 622, 1941: Timothy Leary, Office of Medical Examiner, Boston, $75, illustrations for article on atherosclerosis. See grant 471, 1937. Leary, Timothy: The Genesis of Atherosclerosis, *Arch. Path.* **32:** 507, 1941.

2. INCOMPLETE—WORK IN PROGRESS

Grant 254, 1932: J. Lisle Williams, Rush Medical College, Chicago, $200, decreased dextrose tolerance in acute infectious diseases.

Grant 310, 1934: Lay Martin, Johns Hopkins University, $150, gastric juice. See grant 462, 1937.

Grant 355, 1935. Royall M. Calder, San Antonio, Texas, $150, mechanism of pneumococcic inflammation.

Grant 441, 1937: Edward S. West and G. E. Burget, University of Oregon Medical School, $350, diuretic action and chemical metabolism of sorbitol. Todd, W. R.; Myers, J., and West, E. S.: On the Metabolism of Sorbitol and Mannitol, *J. Biol. Chem.* **127**: 275, 1939.

Grant 445, 1937: Paul M. Levin, Johns Hopkins University, $250, cerebral efferent tracts in primates. Levin, P. M.: A Nervous Structure in the Pineal Body of the Monkey, *J. Comp. Neurol.* **68**: 405, 1938. Levin, P. M., and Bradford, F. K.: The Exact Origin of the Corticospinal Tract in the Monkey, *ibid.* **68**: 411, 1938.

Grant 462, 1937: Lay Martin, Johns Hopkins University, $200, gastric juice. See grant 310, 1934.

Grant 474, 1937: Marion Fay, Woman's Medical College of Pennsylvania, $275, biochemistry of strontium. See grant 552, 1939.

Grant 479, 1937: Tracy J. Putnam, Boston City Hospital, $200, injuries to the cervical portion of the cord.

Grant 480, 1937: Amy L. Daniels, State University of Iowa, $250, relation of fluorine to physiologic function.

Grant 481, 1937: Warren O. Nelson, Wayne University College of Medicine, $200, synthetic androgenic substances.

Grant 503, 1938: R. C. Robb, Syracuse University College of Medicine, $800, diseases in twins.

Grant 504, 1938: Wallace M. Yater, Georgetown University Medical School, $500, histopathology of "bundle branch" block.

Grant 510, 1938: Erma A. Smith, Iowa State College, $150, influence of various substances on gastrointestinal motility. Smith, Erma A., and Penrod, K. E.: Gastrointestinal Motility in the Albino Rat After Administration of Amphetamine Sulfate, *Proc. Soc. Exper. Biol. & Med.* **47**: 418, 1941.

Grant 518, 1938: Harold D. West, Meharry Medical College, $100, synthesis of *dl*-threonine. See grant 559, 1939.

Grant 522, 1938: Ludwig A. Emge, Stanford University School of Medicine, $500, relation of sex hormones to tumor growth.

Grant 527, 1938: Alexander Levy, University of Oregon Medical School, $300, occlusion of the coronary arteries. See grant 577, 1940.

Grant 532, 1939: Walter Schiller, Cook County Hospital, Chicago, $200, ovarian tumors. Schiller, Walter: Liver Cell Fat Necrosis Caused by Pancreatic Reflux, *Surg., Gynec. & Obst.* **72**: 70, 1941.

Grant 533, 1939: Hardy A. Kemp and W. M. Fisher, Baylor University, $500, venom of southern and southwestern scorpions.

Grant 536, 1939: Catharine Macfarlane, Woman's Medical College of Pennsylvania, $1,900, value of periodic pelvic examination in detecting cancer of the uterus. See grant 494, 1938. Macfarlane, Catharine; Petterman, Faith S., and Sturgis, Margaret C.: Report of an Experiment in the Control of Cancer of the Uterus, *Quart. Rev.*, New York City Cancer Committee, 1941. Macfarlane, Catharine: Progress Report on Experiment in Control of Cancer of the Uterus, *Connecticut State M. J.* **5**: 814, 1941. Macfarlane, Catharine: Precancerous Lesions of Uterine Cervix, *M. Woman's J.*, July 1941.

Grant 539, 1939: Albert V. Hardy, Columbia University, $500, Shigella dysenteriae. Hardy, A. V.: The Mouse Mucin Test in the Study of Shigella, to be published.

Grant 541, 1939: Henry Laurens, Tulane University, $350, lowering of arterial pressure by carbon arc radiation. See grant 498, 1938. Laurens, Henry, and Graham, J. S.: The Influence of the Pressure Lowering Effect of Carbon Arc Radiation, *M. Rec.* **154**: 146, 1941.

Grant 542, 1939: Kendall B. Corbin, University of Tennessee, $200, alterations in the hip after deafferentation.

Grant 552, 1939: Marion Fay, Woman's Medical College of Pennsylvania, $250, biochemistry of strontium. See grant 474, 1937.

Grant 557, 1939: W. D. Armstrong, University of Minnesota, $500, calcification of bone in vitro.

Grant 559, 1939: Harold D. West, Meharry Medical College, $50, synthesis of *dl*-threonine. See grant 518, 1938.

Grant 560, 1939: B. S. Kline and H. P. Lankelma, Western Reserve University, $500, chemical study of antigens. Wellman, J. W., and Lankelma, H. P.: Purification of the Antigen of Syphilis, *Vir. Dis. Inform.* **22**: 12, 1941.

Grant 562, 1939: Joseph H. Roe, George Washington University, $350, vitamin C requirements of man. Kuether, Carl A., and Roe, J. H.: Determination of Ascorbic Acid in Whole Blood, *Proc. Soc. Exper. Biol. & Med.* **47**: 467, 1941. Roe, J. H.; Hall, J. M., and Dyer, H. M.: Relation of Nutrition to Gastric Function: II. The Effect of Vitamin C Deficiency, *Am. J. Digest. Dis.* **8**: 261, 1941.

Grant 567, 1940: Armand J. Quick, Marquette University, $275, conversion of prothrombin to thrombin. Quick, A. J.: Prothrombin Concentration of the Blood in Various Species, *Am. J. Physiol.* **132**: 239, 1941. Prothrombin Level of Blood After Intramuscular Injection of Sodium Citrate, *Proc. Soc. Exper. Biol. & Med.* **47**: 1, 1941.

Grant 570, 1940: William H. Sweet, University of Chicago, $300, course of nerve fiber tracts of the temporal lobe.

Grant 571, 1940: Joseph T. King, University of Minnesota, $280, antagonistic effect of tissues on the action of sulfanilamide.

Grant 574, 1940: A. G. Eaton, Louisiana State University, $300, absorption and metabolism of amino acids. Eaton, A. G., and Doty, J. R.: The Heat Production and Blood and Urine Constituents After Administration of 1(-) Histidine to the Dog, *J. Nutrition* **21**: 25, 1941.

Grant 576, 1940: Edward S. West, University of Oregon Medical School, $250, solution of vesical calculi.

Grant 577, 1940: Alexander H. Levy, University of Oregon Medical School, $200, collateral circulation for coronary occlusion. See grant 527, 1938.

Grant 579, 1940: Harry C. Bolnick, Michael Reese Hospital, Chicago, $200, effect of trauma on the response of the kidney to sudden blockage.

Grant 582, 1940: Charles W. Greene, Stanford University, $500, physiology of the coronary system in monkeys.

Grant 583, 1940: Ulrich Friedemann, Jewish Hospital of Brooklyn, $300, genesis of tetanus. Friedemann, Ulrich; Hollander, A., and Tarlov, I. M.: Investigations of the Pathogenesis of Tetanus: III, *J. Immunol.* **40**: 325, 1941.

Grant 584, 1940: Oscar V. Batson, University of Pennsylvania, $200, nystagmus.

Grant 585, 1940: Howard Curl, University of Tennessee, $400, roentgenologic study of the normal gallbladder.

Grant 590, 1940: David Polowe, Paterson, N. J., $150, pancreatic function test. See grant 597, 1940.

Grant 591, 1940: Percival Bailey, University of Illinois, $500, effects of electrolytic lesions in the periaqueductal gray matter of the Macacus monkey.

Grant 593, 1940: A. M. Lassek, Medical College of the State of South Carolina, $300, origin of the pyramidal tract in the monkey. The Effect of Pre- and Postcentral Cortical Ablations on the Fibers of the Pyramids in Monkeys, *J. Nerv. & Ment. Dis.*, to be published.

Grant 594, 1940: I. L. Chaikoff, University of California, $350, phospholipid metabolism and blood regeneration as measured by radioactive phosphorus.

Grant 595, 1940: Arthur C. Allen, Mount Sinai Hospital, New York, $250, effect of chemicals on vegetations of experimental endocarditis.

Grant 596, 1940: Israel Davidsohn, Mount Sinai Hospital, Chicago, $400, lacteriogenic hemagglutination.

Grant 597, 1940: David Polowe, Paterson, N. J., $100, pancreatic function test. See grant 590, 1940.

3. WORK STOPPED; NO RESULT PUBLISHED

Grant 547, 1939: Max T. Schnitker, Toledo Hospital, Toledo, Ohio, $300, Berger rhythm determinations following cerebral trauma (refund, $150). The work was stopped for the time being on account of technical difficulties.

Grant 602, 1941: Doran J. Stephens, University of Rochester, $400, changes in the thyroid gland of undernourished guinea pigs (refund, $371.34).) The grantee died on March 19, 1941. See grant 575, 1940.

Report of Committee on Therapeutic Research

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year 1941 the committee issued thirty new grants. A detailed list of these grants, a list of publications during 1941, and a list of unexpired grants made before Jan. 1, 1941 are included in this report.

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1941:

Optimal NaCl Concentration for Oral Saline Diuresis, Julius M. Coon, R. O. Neojin and Carl Pfeiffer: *Am. J. Physiol.* **134**: 723 (Nov.) 1941.

An Experimentally Derived Method for Determining the Degree of Infection in Avian Malaria, Harry Beckman: *Am. J. Trop. Med.* **21**: 131 (Jan.) 1941.

The Cause of Death in Experimental Anuria, Hebbel E. Hoff, Paul K. Smith and Alexander W. Winkler: *J. Clin. Investigation* **20**: 607 (Nov.) 1941.

Toxicity of Potassium in Adrenalectomized Dogs, A. W. Winkler, H. E. Hoff and P. K. Smith: *Am. J. Physiol.* **133**: 494 (June) 1941.

The Cause of Death in Experimental Anuria, H. E. Hoff, P. K. Smith and A. W. Winkler: *Am. J. Physiol.* **133**: 331 (June) 1941.

Recovery of Fatigued Muscle Following Intravenous Injection of Potassium Chloride, Hebbel E. Hoff, Alexander W. Winkler and Paul K. Smith: *Am. J. Physiol.* **131**: 615 (Jan.) 1941.

The Toxicity of Orally Administered Potassium Salts in Renal Insufficiency, A. W. Winkler, H. E. Hoff and P. K. Smith: *J. Clin. Investigation* **20**: 119 (March) 1941.

Lactogenic Hormone: Extraction and Assay of Lactogenic Hormone in Postpartum Urine, Joseph Meites and C. W. Turner: *J. Clin. Endocrinol.* **1**: 918 (Nov.) 1941.

Does Pregnancy Suppress the Lactogenic Hormone of the Pituitary? C. W. Turner and Joseph Meites: *Endocrinology* **29**: 165 (Aug.) 1941.

Relation of Size of Litter to AP Lactogen Content of Nursing Rabbits, J. Meites, A. J. Bergman and C. W. Turner: *Proc. Soc. Exper. Biol. & Med.* **46**: 670, 1941.

Comparison of Assay Methods Using International Standard Lactogen, J. Meites, A. J. Bergman and C. W. Turner: *Endocrinology* **28**: 707 (May) 1941.

The Reliability of the Cobalt-Isopropylamine Color Reaction for Amytal: The Evaluation of Chromogenic Substances in Urine, R. F. Krause and Richard F. Riley: *J. Pharmacol. & Exper. Therap.* **71**: 267 (March) 1941.

Blood Sugar and Liver Glycogen: II. Recovery After Single and Repeated Doses of Sulfonamide Drugs, Roberta Hafkesbring, Esther M. Greisheimer and Grace E. Wertenberger: *Medical Times*, November 1941.

III. Blood *pn* and the Sulfonamides, Grace E. Wertenberger: *Medical Times*, November 1941.

NaCl and Peritoneal Absorption and Renal Excretion of Glucose in Normal and Diabetic Rats, George Sayers and James M. Orten: *Proc. Soc. Exper. Biol. & Med.* **46:** 287, 1941.

The Electrocardiogram in Acute Emetine Intoxication, Linn J. Boyd and David Scherf: *J. Pharmacol. & Exper. Therap.* **71:** 362 (April) 1941.

Factors Influencing the Conjugation of Sulfapyridine, B. K. Harned and V. V. Cole: *J. Biol. Chem.* **140:** liii (July) 1941.

The Relative Responses of the Dorsal Metacarpal Digital and Terminal Skin Arteries of the Hand in Vasoconstrictor Reflexes, Alrick B. Hertzman: *Am. J. Physiol.* **134:** 59 (Aug.) 1941.

Use of Colchicine in Detecting Hormonal Effects on Vaginal Epithelium of Menstruating and Castrate Women, Ephraim Shorr and Eugene J. Cohen: *Proc. Soc. Exper. Biol. & Med.* **46:** 330, 1941.

The Effect of Histamine on the Pulmonary Blood Pressure of Various Animals With and Without Anesthesia, R. A. Woodbury and W. F. Hamilton: *J. Pharmacol. & Exper. Therap.* **71:** 293 (March) 1941.

The Effect of Convulsive Doses of Metrazol on Blood Pressure: As Employed Therapeutically, During Spinal Anesthesia and During Asthenia, from Curare, R. A. Woodbury, H. M. Cleckley, Perry P. Volpitto and W. F. Hamilton: *Am. J. Physiol.* **133:** 498 (June) 1941.

The Effect of Metrazol on the Blood Pressure of Man and Dog, R. A. Woodbury, W. F. Hamilton, H. M. Cleckley and Perry P. Volpitto: *J. Pharmacol. & Exper. Therap.* **73:** 431 (Dec.) 1941.

Effect of Pentothal Sodium on Urine Output Under Various Experimental Conditions, Herbert Silvette: *J. Pharmacol. & Exper. Therap.* **72:** 37 (May) 1941.

Acquired Tolerance to Small Doses of Postpituitary Extract, Herbert Silvette and C. N. Paimas: *Am. J. Physiol.* **133:** 447 (June) 1941.

The Effect of Various Agents on Blood Coagulation Time in Dogs, J. A. Richardson, F. C. Hays and R. P. Walton: *J. Pharmacol. & Exper. Therap.* **73:** 146 (Oct.) 1941.

Recovery After Sulfonamide Drugs, Roberta Hafkesbring and Esther M. Greisheimer: *Am. J. Physiol.* **133:** 310 (June) 1941.

pn Changes in the Blood Following Sulfapyridine and Sulfathiazole Administration, Grace E. Wertenberger: *Am. J. Physiol.* **133:** 488 (June) 1941.

A Classification of the Causes of Hypoleydigism, Fuller Albright, Ann P. Forbes, Russell Fraser, Bretney Miller and Edward C. Reifenstein: *Tr. A. Am. Physicians* **56:** 43, 1941.

A New Microrespirometer for Nerve, P. W. Davies and Frank Brink Jr.: *Am. J. Physiol.* **133:** 257 (June) 1941.

Chemical Control of Respiration and Activity in Peripheral Nerve, D. W. Bronk, Frank Brink Jr. and P. W. Davies: *Am. J. Physiol.* **133:** 224 (June) 1941.

Chemical Initiation of Rhythmic Local Responses in Nerve Preceding Trains of Propagated Impulses, Frank Brink Jr. and D. W. Bronk: *Am. J. Physiol.* **133:** 222 (June) 1941.

The Ionic Permeability (Electrical Conductance) of the Sensitized Nictitating Membrane of the Cat, Rose Marrazzi and Amedeo S. Marrazzi: *Am. J. Physiol.* **132:** 377 (June) 1941.

Correlation Between Structure and the Ratio of Inhibitory to Pressor Activity of Sympathomimetic Amines, Amedeo S. Marrazzi: *J. Pharmacol. & Exper. Therap.* **71:** 28 (May) 1941.

Coronary Reflex Dilatations Accompanying Contractions of Voluntary Muscles, Charles W. Greene: *Am. J. Physiol.* **132:** 321 (March) 1941.

Clinical and Experimental Studies on Paraldehyde, Meyer Bodansky, Julius Luther Jinkins, Harry Levine and Albert Joseph Gilbert: *Anesthesiology* **2:** 20 (Jan.) 1941.

Resistance to Slowly Increasing Doses of Sodium Pentobarbital in the White Rat: Duration of Higher Tolerance After Parturition and Effects of Age, Sex, Castration and Administration of Testosterone Propionate, Harald G. O. Holck and Donald R. Mathieson: *Am. J. Physiol.* **133:** 332 (June) 1941.

Mammary Growth in Hypophysectomized Male Mice Receiving Estrogen and Prolactin, W. U. Gardner and Abraham White: *Proc. Soc. Exper. Biol. & Med.* **48:** 590, 1941.

The Absorption and Fate of Free Citric Acid in the Rat, Carl A. Kuether and Arthur H. Smith: *J. Biol. Chem.* **137:** 647 (Feb.) 1941.

Effects of Estrone and Progesterone on Male Rabbit Mammary Glands: I. Varying Doses of Progesterone, William R. Lyons and Daniel A. McGinty: *Proc. Soc. Exper. Biol. & Med.* **48:** 83, 1941.

Effects of Estrone and Progesterone on Male Rabbit Mammary Glands: II. Varying Doses of Estrone, George Scharf and William R. Lyons: *Proc. Soc. Exper. Biol. & Med.* **48:** 83, 1941.

Mammalian and Avian Assays of Hypophysial Lactogenic Preparations, William R. Lyons: *Endocrinology* **28:** 161 (Feb.) 1941.

Tissue Hydration During Morphine Addiction and Withdrawal in Rats on Low Calcium Diet and on High Calcium Diet with Parathyroid Hormone Injections, Lawrence E. Detrick and C. H. Thienes: *Arch. internat. de pharmacodyn. et de thérap.* **66:** 130 (July 31) 1941.

Cardiac Output in Coronary Occlusion Studied by the Wezler-Boeger Physical Method, Arthur Grishman and Arthur M. Master: *Proc. Soc. Exper. Biol. & Med.* **48:** 207, 1941.

Blood Sugar and Liver Glycogen After Single Doses of Sulfanilamide, Sodium Sulfapyridine and Sodium Sulfathiazole, Esther M. Greisheimer, Roberta Hafkesbring and Hulda Magalhaes: *Medical Times* **69:** 170 (April) 1941.

Quantitative Effects of Implantation of Cattle Anterior Pituitary Powder on Gonads of Immature Rat, Robert H. Shuler: *Proc. Soc. Exper. Biol. & Med.* **46:** 537, 1941.

The Clinical Pathological Correlation of Neurosyphilis, Hyman S. Rubinstein: *Urol. & Cutan. Rev.* **45:** 255 (April) 1941.

Bromine and the Thyroid, Emil J. Baumann, David B. Sprinson and David Marine: *Endocrinology* **28:** 793 (May) 1941.

The Effects of Nitrites and Xanthines on Coronary Inflow and Blood Pressure in Anesthetized Dogs, Norman H. Boyer and Harold D. Green: *Am. Heart J.* **21:** 199 (Feb.) 1941.

The Effect of Sodium Nitrite on the Emptying Time of the Normal Human Stomach, Clarck K. Sleeth and Edward J. Van Liere: *Arch. internat. de pharmacodyn. et de thérap.* **65:** 5 (Jan.) 15) 1941.

The Effect of Testosterone Propionate on the Rat Testis, H. S. Rubinstein and A. A. Kurland: *Endocrinology* **28:** 495 (March) 1941.

Further Study of Central Stimulation from Sympathomimetic Amines, J. W. Schulte, E. C. Reif, J. A. Bacher Jr., W. S. Lawrence and M. L. Tainter: *J. Pharmacol. & Exper. Therap.* **71:** 62 (Jan.) 1941.

The Mechanics of Gastric Evacuation, J. M. Werle, D. A. Brody, E. W. Ligon Jr., M. R. Read and J. P. Quigley: *Am. J. Physiol.* **131:** 606 (Jan.) 1941.

Ascorbic Acid and Arsphenamine Dermatitis, Frank M. McDonald and Herbert H. Johnson: *Arch. Dermat. & Syph.* **43:** 682 (April) 1941.

Studies on the Inactivation of Diphtheria Toxin by Vitamin C (l-Ascorbic Acid) Claus W. Jungeblut: *J. Infect. Dis.* **69:** 70 (July-Aug.) 1941.

Effect of Sulfapyridine on Staphylococcus Toxin, R. H. Rigdon, Anne Haynes and Alys Lipscomb: *J. Lab. & Clin. Med.* **26:** 1111 (April) 1941.

Serum Therapy of Tetanus, Ralph Spaeth: *Am. J. Dis. Child.* **61:** 1146 (June) 1941.

Estrin Potency and Basal Metabolism, Mary E. Collett, Faith W. Reed, Leabelle Isaac, Sylvia Rouse and Eleanor Yeakel: *Am. J. Obst. & Gynec.* **42:** (July) 1941.

Acute Fatal Insulin Poisoning, Eugene L. Jackson: *J. Pharmacol. & Exper. Therap.* **72:** 21 (May) 1941.

The Effects of Benzedrine, Coramine, Metrazol and Picrotoxin on Body Temperature and Gaseous Metabolism in Rabbits Depressed by Alcohol, Harold W. Werner: *J. Pharmacol. & Exper. Therap.* **73:** 45 (May) 1941.

The following grants were issued before Jan. 1, 1941. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed or not yet published.

Grant 164: E. L. Jackson, associate professor of pharmacology, Emory University School of Medicine, $200, to investigate the antagonism between sodium barbital and insulin.

Grant 221: John G. Reinhold, Department of Public Health, Philadelphia General Hospital, $250, to investigate the action of aminoacetic acid (glycine) in progressive muscular dystrophy.

Grant 232: George R. Cowgill, associate professor of physiologic chemistry, Yale University School of Medicine, $250, to investigate the heart in vitamin B deficiency.

Grant 238: Roy R. Kracke, professor of pathology, Emory University School of Medicine, $250, to investigate the effect of the oxidation products of aminopyrine and related drugs on the leukocyte counts of rabbits.

Grant 248: Fred C. Koch, chairman of the Department of Physiological Chemistry and Pharmacology, University of Chicago, $250, to investigate the male sex hormone.

Grant 263: H. A. Shoemaker, associate professor of biochemistry and pharmacology; C. E. Clymer, professor of clinical surgery, and Henry H. Turner, University of Oklahoma School of Medicine, $150, to investigate the blood cholesterol and iodine value in thyroid disease and their alteration by treatment.

Grant 264: Detlev W. Bronk, Johnson professor of biophysics, University of Pennsylvania School of Medicine, $200, to investigate the action of various drugs on the autonomic centers.

Grant 280: John P. Peters, professor of medicine, Yale University School of Medicine, $200, to investigate by means of intravenous pyelography the state of ureters and kidneys in a large series of patients after delivery and subsidence of acute signs of toxemia.

Grant 297: Melvin Dresbach, Harvard University School of Medicine, $250, to investigate the emetic effect of some of the digitalis bodies.

Grant 305: Beverly Douglas, assistant dean and associate professor of Surgery, Vanderbilt University School of Medicine, $250, to investigate the pneumatic (transparent rubber jacket) system of treating extensive wounds.

Grant 306: Edwards A. Park, professor of pediatrics, Johns Hopkins University School of Medicine, $75, to investigate rickets in the rat and the effect of solution of parathyroid on the circulation of the bone.

Grant 311: Clarence P. Berg, assistant professor of biochemistry, State University of Iowa, $250, to investigate amino acids.

Grant 314: F. C. Koch, chairman, Department of Physiological Chemistry and Pharmacology, University of Chicago, $250, to investigate provitamin D.

Grant 333: Owen S. Gibbs, former chief of Pharmacological Division, University of Tennessee College of Medicine, $180, to investigate the toxicity of morphine and scopolamine on rats.

Grant 355: Peter K. Knoefel, associate professor of pharmacology, University of Louisville School of Medicine, $150, to investigate the action of the amines, of the epinephrine series and of related substances on the central nervous system.

Grant 356: John B. Lagrn, research associate in medicine, University of California Medical School, $150, to investigate the potassium and sodium ions in the blood of asthmatic patients and in anxiety states.

Grant 362: James M. Orten, assistant professor of physiologic chemistry, Wayne University College of Medicine, $150, to investigate the effect of copper and certain other inorganic salts on the hypoglycemic activity of insulin.

Grant 367: Simon Benson, former dean of pharmacy, Ferris Institute, $100, to investigate the therapeutic effects of skin counterirritants.

Grant 370: Harald G. O. Holck, associate professor of pharmacology, University of Nebraska College of Pharmacy, $250, to investigate the possible effect of aging on the strength of digitalis preparations.

Grant 375: Joseph Seifter, Department of Pharmacology, Western Reserve University School of Medicine, $250, to investigate the pharmacology of metal alkyls.

Grant 376: R. W. Gerard, professor of physiology, the University of Chicago, $200, to investigate the therapeutic effect of pyocyanin in schizophrenia.

Grant 391: A. R. McIntyre, professor of physiology and pharmacology, the University of Nebraska College of Medicine, $100, to investigate cubain and cardiac muscle and metabolism.

Grant 392: Arthur H. Smith, chairman of the Department of Physiological Chemistry, Wayne University College of Medicine, $200, to investigate the rate of absorption of citric acid and citrates from the intestine, and the relative significance of these compounds as precursors of liver glycogen.

Grant 393: Arnold De M. Welch, formerly of the Department of Pharmacology, Washington University School of Medicine, $300, to investigate the lipotropic activity of choline, betaine and their derivatives.

Grant 395: R. W. Whitehead, professor of physiology and pharmacology, University of Colorado School of Medicine and Hospitals, $150, to investigate the influence of electrolytes in anaphylaxis.

Grant 403: Erwin E. Nelson, professor of pharmacology, Tulane University School of Medicine, $100, to investigate pituitary extracts.

Grant 404: Carl Pfeiffer, Department of Pharmacology, Wayne University College of Medicine, $300, to investigate caffeine withdrawal headaches.

Grant 405: A. C. Ivy, Department of Physiology, Northwestern University Medical School, $225, to investigate the effect of gastrectomy on the monkey.

Grant 406: John C. Krantz Jr., professor of pharmacology, University of Maryland, $250, to investigate the action of the nitrites.

Grant 408: Ephraim Shorr, assistant professor of medicine, Cornell University Medical College, $300, to investigate the effect of progesterone on the vaginal smear.

Grant 409: Reinhard Beutner, professor of pharmacology, Hahnemann Medical College and Hospital, Philadelphia, $200, to investigate the toxicity and detoxification of local anesthetics.

Grant 411: Linn J. Boyd, professor of pharmacology, New York Medical College, $300, to investigate the effects of hypnotics on mercurial diuresis.

Grant 412: Anne Forbes, Massachusetts General Hospital, Boston, $400, to investigate the effect of various endocrine diseases and the administration of various endocrine products on the 17-keto-steroid secretion in the urine.

Grant 413: Claude E. Forkner, New York Hospital, Department of Medicine, $200, to investigate bronchiectasis, etiology and treatment.

Grant 415: B. K. Harned, professor of pharmacology, and V. V. Cole, assistant professor of pharmacology, Woman's Medical College of Pennsylvania, $300, to investigate the effects of sulfanilamide and sulfapyridine on hepatic function.

Grant 416: Alrick B. Hertzman, associate professor of physiology, St. Louis University School of Medicine, $300, to investigate peripheral circulation.

Grant 417: H. E. Hoff, assistant professor of physiology, A. W. Winkler, instructor in medicine, and P. K. Smith, research assistant in pharmacology and toxicology, Yale University School of Medicine, $250, to investigate the action of ions.

Grant 419: Thomas H. McGavack, New York Medical College, $300, to investigate the action of lipocaic and pancreatic extracts.

Grant 420: Lester M. Morrison, Temple University Medical School and Hospital, $300, to investigate the effect of sulfanilamide on infections of the gallbladder.

Grant 421: Herbert Silvette, assistant professor of pharmacology, University of Virginia Medical School, $250, to investigate the effects of the antidiuretic hormone of the posterior pituitary gland.

Grant 422: Charles W. Turner, professor of dairy husbandry, University of Missouri College of Agriculture, $500, to investigate the action of lactogenic hormone in cases of deficient lactation.

Grant 423: Treat B. Johnson, professor of organic chemistry, Yale University School of Medicine, $250, to investigate pyrimidines.

Grant 426: J. P. Quigley, Department of Physiology, Western Reserve University School of Medicine, $250, to investigate the mechanism of pylorospasm.

Grant 428: Milton Kissin, Beth Israel Hospital, New York, $50, to investigate the influence of aminophylline among cardiac patients.

Grant 429: John A. Vaichulis, Loyola University School of Medicine, $300, to investigate the separation of the pressor and oxytocic fractions from the pituitary gland.

Grant 430: J. P. Simonds, Department of Pathology, Northwestern University Medical School, $100, to investigate the selective action of different types of poisons on the kidneys.

Grant 431: Meyer Bodansky, professor of pathologic chemistry, University of Texas School of Medicine, $200, to investigate the metabolism and pharmacology of paraldehyde.

Grant 432: Harry Beckman, professor of pharmacology, Marquette University School of Medicine, $250, to investigate the prophylaxis of malaria.

Grant 434: William R. Lyons, Division of Anatomy, University of California Medical School, $200, to investigate lactogenic hormones.

During 1941 the following grants were made:

Grant 436: Richard C. de Bodo, associate professor of pharmacology, New York University College of Medicine, $350, to investigate the antidiuretic action of the narcotics.

Grant 437: M. L. Tainter, professor of pharmacology, Stanford University School of Medicine, $250, to investigate sympathomimetic amines.

Grant 438: George L. Maison, assistant professor of physiology, Wayne University College of Medicine, $200, to investigate the effect of certain drugs on the strength of skeletal muscle.

Grant 439: H. N. Cole, clinical professor of dermatology and syphilology, Western Reserve University School of Medicine, $45.60, to investigate the effect of the administration of gold sodium thiosulfate.

Grant 440: W. E. Hambourger, assistant professor of pharmacology, Western Reserve University School of Medicine, $100, to investigate the action of drugs on the central nervous system.

Grant 441: Harald G. O. Holck, associate professor of pharmacology, University of Nebraska College of Pharmacy, $150, to investigate the relation of sex to drug action.

Grant 442: Morton McCutcheon, associate professor of pathology, University of Pennsylvania School of Medicine, $150, to investigate cellular locomotion.

Grant 443: A. B. Baker, assistant professor of neuropsychiatry and neuropathology, and Raymond N. Bieter, professor of pharmacology, University of Minnesota Medical School, $500, to investigate toxic effects of sulfanilamide and derivatives on nervous system and effect of vitamin B complex in prevention of such injuries.

Grant 445: Paul L. Day, professor of physiologic chemistry, and John R. Totter, instructor in physiologic chemistry, University of Arkansas School of Medicine, $300, to investigate ocular manifestations of tryptophan deficiency.

Grant 446: Carl A. Dragstedt, professor of pharmacology, Northwestern University Medical School, $100, to investigate the effect of heparin on anaphylactic and related phenomena.

Grant 447: W. F. Hamilton, professor of pharmacology and physiology, University of Georgia School of Medicine, $125, to investigate blood pressure responses in normal and anesthetized animals.

Grant 448: Victor G. Haury, associate professor of pharmacology, Jefferson Medical College of Philadelphia, $250, to investigate the pharmacologic and physiologic behavior of magnesium, calcium and potassium.

Grant 449: Alrick B. Hertzman, professor of physiology, St. Louis University School of Medicine, $500, to investigate peripheral circulation.

Grant 450: Linn J. Boyd, professor of pharmacology, and David Scherf, associate clinical professor of medicine, New York Medical College, $50, to investigate the effect of strophanthin in paroxysmal tachycardia.

Grant 451: W. J. MacNeal, director of the Laboratories of Bacteriology, New York Post-Graduate Medical School and Hospital, $400, to investigate therapy of experimental viridans endocarditis.

Grant 452: W. J. MacNeal, director of the Laboratories of Bacteriology, New York Post-Graduate Medical School and Hospital, $250, to investigate the bacteriophage phenomenon and therapeutic application of bacteriophages.

Grant 453: Amedeo S. Marrazzi, assistant professor of pharmacology, New York University College of Medicine, $500, to investigate sympathomimetic amines.

Grant 454: W. L. Mendenhall, professor of pharmacology, and Albert J. Plummer, assistant professor of pharmacology, Boston University School of Medicine, $50, to investigate the quantitative determination of theophylline.

Grant 455: Frederick H. Pratt, professor of physiology, and Marion A. Reid, instructor in physiology, Boston University School of Medicine, $100, to investigate the effect of cardiac drugs on the denervated lymphatic hearts.

Grant 456: H. Morrow Sweeney, professor of physiology and pharmacology, University of South Dakota, $100, to investigate the effects and mode of action of certain drugs with analeptic properties, namely amphetamine and metrazol, after morphine and sodium pentobarbital respectively.

Grant 457: Leland C. Wyman, associate professor of physiology, Boston University School of Medicine, $372.50, to investigate the factors controlling the growth and functional efficiency of transplanted adrenal cortical tissue.

Grant 458: George Fahr, professor of internal medicine, University of Minnesota Medical School, $100, to investigate the effects of lanatoside C on certain types of heart disease.

Grant 459: Mary E. O'Sullivan, Bellevue Hospital, $100, to investigate the therapeutic effect of estradiol in muscular dystrophy.

Grant 460: Esther M. Greisheimer, professor of physiology, Woman's Medical College of Pennsylvania, $150, to investigate the effects of sulfanilamide and related compounds on blood sugar and liver glycogen.

Grant 461: Roberta Hafkesbring, associate professor of physiology, Woman's Medical College of Pennsylvania, $250, to investigate electrocardiographic changes during the administration of sulfonamide drugs.

Grant 462: B. K. Harned, professor of pharmacology, Versa V. Cole, associate professor of pharmacology, and Hughbert C. Hamilton, associate professor of physiology, Woman's Medical College of Pennsylvania, $288, to investigate the effects of bromide administered to pregnant rats on the learning ability of the offspring.

Grant 463: Abraham White, assistant professor of physiologic chemistry, Yale University School of Medicine, $200, to investigate the hormones of the anterior pituitary gland.

Grant 464: A. J. Nedzel, associate professor of pathology, University of Illinois College of Medicine, $300, to investigate response of the animal body to drugs under different environmental conditions.

Grant 465: L. N. Katz, director of cardiovascular research, Michael Reese Hospital, $200, to investigate the action of various steroids on capillary permeability.

Grant 466: R. H. Rigdon, associate professor of pathology, University of Tennessee, $100, to prepare a movie of a clinical case of malaria with the pathologic changes.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the Year Ended December 31, 1941

Investments (At Cost) as at January 1, 1941		$2,317,897.84
Bonds Purchased (At Cost)		170,000.00
		$2,487,897.84
Less:		
Bonds Matured or Sold		65,954.85
Investments as at December 31, 1941		$2,421,942.99
Balance for Investment January 1, 1941	$ 209,294.05	
Interest Received on Investments—Year 1941	77,424.09	
Uninvested Funds December 31, 1941		286,718.14
Invested and Uninvested Funds as at December 31, 1941		$2,708,661.13

DAVIS MEMORIAL FUND

Balance in Fund January 1, 1941	$7,426.65	
Interest Earned on Bank Balance—Year 1941	93.11	
Funds on Deposit as at December 31, 1941		$ 7,519.76

HERMAN L. KRETSCHMER, Treasurer.

AUDITOR'S REPORT

January 31, 1942.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.

Dear Sirs:

We have examined the Balance Sheet of the American Medical Association, Chicago, Illinois, as of December 31, 1941, and the statement of Income for the year ended on that date, have reviewed the system of internal control and the accounting procedures of the Association and, without making a detailed audit of the transactions, have examined or tested accounting records and other supporting evidence, by methods and to the extent we deemed appropriate except as hereinafter stated regarding confirmation of receivables and observation of the inventory taking.

The cash and bank balances have been confirmed by count or by certificates from the depositaries. The U. S. Government and other marketable securities were inspected; also, an acknowledgment as to custody of the securities for safekeeping was received from the Continental Illinois National Bank and Trust Company of Chicago.

We did not independently confirm the accounts receivable by communication with the debtors. The accounts receivable were reviewed as to age and collectibility and, in our opinion, the balances are fully realizable. We reviewed the plan and system of control adopted for inventory taking but we did not observe the taking of the inventories nor did we make tests of the physical existence of the quantities recorded.

Expenditures charged to property and equipment accounts during the year, in our opinion, were properly capitalized as representing additions or improvements. The provision for depreciation for the year appears to be adequate.

In our opinion, subject to the exceptions set forth in paragraph three, the accompanying Balance Sheet and related statement of Income present fairly the position of the American Medical Association at December 31, 1941, and the results of the operations for the year, based on the accounting procedures employed by the Association regarding which the following observations are submitted:

(a) In accordance with the established practice of the Association, the accounts as stated do not include (a) unrecorded assets in respect of accrued interest on bond investments, and membership dues unpaid; and (b) provision for accrued property taxes for the year 1940, and sundry unpaid bills and wages.

(b) Subscriptions paid in advance are stated at an estimated amount which is based on cash received in December 1941, on account of 1942 subscriptions. This procedure conforms to the method used in prior years.

(c) Advance payments on publications include an estimated amount ($137,077.28) for prepaid subscriptions to HYGEIA and the amount ($41,813.79) received in advance for January 1942 advertising, directory information sales and service.

(d) As of January 1, 1941, the land and buildings accounts were restated on the basis of cost, and the complementary credit in respect to unrealized appreciation applicable thereto was eliminated from the net worth of the Association.

We have received a letter from Messrs. Loesch, Scofield, Loesch and Burke, attorneys for the Association, regarding litigation pending against the Association or its officers at December 31, 1941, which states that the following lawsuits had been filed:

Jean Paul Fernel—$1,000,000.00 (libel)
William E. Balsinger—$100,000.00 (libel)
Muriel Longini—$1,000.00 (claim)
United States of America (conspiracy in restraint of trade)

The attorneys state that in their opinion all of these suits will be defeated.

Fidelity insurance is carried against the undermentioned officers and employees, in the amounts stated:

Dr. Olin West, Secretary and General Manager	$10,000.00
Dr. Herman L. Kretschmer, Treasurer	10,000.00
E. A. Hoffman, Cashier	10,000.00
J. E. Hartigan, Assistant Cashier	2,000.00
Sundry Employees (thirteen, $1,000.00 each)	13,000.00
Total Fidelity Insurance	$45,000.00

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly,

PEAT, MARWICK, MITCHELL & Co.

INDEX TO STATEMENTS

	Exhibit
Balance Sheet, as of December 31, 1941	"A"
Income Account, for the year ended December 31, 1941	"B"
	Schedule
Journal Operating Expenses, for the year ended December 31, 1941	"1"
Association and Miscellaneous Expenses, for the year ended December 31, 1941	"2"

EXHIBIT "A"

BALANCE SHEET

AS OF DECEMBER 31, 1941

ASSETS:		
Property and Equipment—at cost:		
Land		$ 328,773.98
Buildings	$1,176,582.08	
Machinery and Printing Equipment	502,167.59	
Office and Laboratory Equipment	193,009.90	
	1,871,759.57	
Less—Reserve for Depreciation	913,343.45	958,416.12
Type Metal (Book Inventory)—at average cost		22,330.01
Building under Construction		148,400.00
Total Property and Equipment		1,457,920.11
Marketable Securities—at cost (valuation based on market quotations $2,475,533.78):		
U. S. Government Securities	1,723,816.81	
Railroad, Municipal and Public Utility Bonds	698,126.18	2,421,942.99
Representing Investments of:		
General Fund	621,942.99	
Association Reserve Fund	350,000.00	
Retirement Reserve Fund	100,000.00	
Building Reserve Fund	450,000.00	
Depreciation Reserve Fund	900,000.00	
Cash held by Treasurer for Investment		286,718.14
Cash in Bank and on Hand		116,420.56
Accounts Receivable:		
Advertising	89,508.69	
Reprints	2,576.30	
Directory, 16th Edition—Estimated realizable balance	646.72	
Miscellaneous Accounts Receivable	1,424.18	94,155.89
Inventories of Materials, Supplies, Work in Progress and Publications		134,560.06
Expenditures on Publications in Progress		102,853.21
Prepaid Expenses, Deposits and Advances:		
Insurance, etc.	9,875.17	
Deposits and Advances	15,129.68	25,004.85
Total		$4,639,575.81

LIABILITIES:		
Accounts Payable:		
Co-operative Medical Advertising Bureau	$ 15,569.84	
Miscellaneous	11,782.26	
Total Accounts Payable		27,351.10
Subscriptions Paid in Advance		$2,533.66
Advance Payments on Publications		178,891.07
Net Worth:		
Association Reserve	$ 350,000.00	
Building Reserve	450,000.00	
Retirement Reserve	100,000.00	
Capital Account:		
Balance as of December 31, 1940 (including $40,000.00 restored during year which was written off cost value of land in 1933)	$3,282,452.34	
Add—Net Income for the year ended December 31, 1941	223,347.64	
	3,505,799.98	
Deduct—Amount transferred during year to Retirement Reserve Fund	25,000.00	3,480,799.98
Net Worth, December 31, 1941		4,380,799.98
Total		$4,639,575.81

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1941

Journal:		
Gross Earnings:		
Fellowship Dues and Subscriptions	$ 795,460.48	
Advertising	1,009,853.96	
Jobbing	6,543.25	
Reprints	202.82	
Books	16,018.96	
Insignia	6,588.84	
Miscellaneous Sales	11,565.14	
Gross Earnings from Journal		1,846,233.45
Operating Expenses—Schedule "1"		1,104,600.38
Net Earnings from Journal		741,633.07
Association Income:		
Income from Investments	$ 77,424.09	
Interest on Social Security Tax Refund	397.06	
Miscellaneous Income	16,611.89	
	94,433.04	
Less—Net Loss on Investments Sold or Called	1,539.10	92,893.94
Gross Income		834,527.01
Association Expenses—Schedule "2"	460,513.58	
Miscellaneous Expenses—Schedule "2"	150,665.79	611,179.37
Net Income		$ 223,347.64

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1941

Wages and Salaries	$ 540,800.30
Editorials, News and Reporting	7,519.99
Paper—Journal Stock	258,964.21
Paper—Miscellaneous	1,226.78
Electrotype and Engravings	15,918.08
Binding	745.15
Ink	7,871.43
Postage—First Class	36,505.49
Postage—Second Class	70,031.85
Journal Commissions	23,271.87
Collection Commissions	481.81
Discounts	34,477.29
Express and Cartage	5,770.86
Exchange	1,270.55
Office Supplies	7,312.07
Telephone and Telegraph	3,797.60
Office Printing	10,959.80
Power and Light	14,490.32
Factory Supplies	19,307.38
Repairs and Renewals—Machinery	2,460.39
Insurance and Taxes	28,221.40
Group Hospital Insurance	3,660.07
Building Expenses	39,837.29
Fuel	8,425.48
Payroll Taxes (New York)	81.00
Miscellaneous Operating Expenses	21,709.47
Loss on Metal Dross Sales	865.25
Loss on Demolition of Storage Building	6,800.11
Bad Debt Loss and Loss on Sales of Equipment	2,772.66
	1,176,055.95
Depreciation (based on estimated remaining life):	
Building	$17,860.07
Machinery	13,031.44
Type and Factory Equipment	1,324.44
Furniture and Equipment	6,022.66 38,238.61
Total	1,214,294.56
Deduct—Proportion of Overhead Expenses charged to other Publications and Departments	109,694.18
Total Journal Operating Expenses	$1,104,600.38

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1941

Association Expenses:	
Association	$106,134.94
Bureau of Health Education	39,139.91
Council on Pharmacy and Chemistry	56,375.72
Chemical Laboratory	15,728.50
Council on Medical Education & Hospitals	67,972.48
Committee on Therapeutic Research	6,471.26
Bureau of Legal Medicine and Legislation	29,969.55
Bureau of Investigation	16,097.27
Bureau of Medical Economics	28,851.47
Council on Foods and Nutrition	21,718.22
Council on Physical Therapy	18,632.09
Council on Industrial Health	14,623.47
Bureau of Association Exhibits	7,611.49
Committee on Medical Preparedness	30,580.04
Laboratory Equipment Depreciation	607.17
Total Association Expenses	$460,513.58
Miscellaneous Expenses:	
Legal and Investigating	$119,183.19
Sundry Publications (net)	31,482.60
Total Miscellaneous Expenses	$150,665.79

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

1. It is with great regret and with a sense of extreme loss to the Association and to the cause of medical education and scientific medicine that the Council records the death of Dr. William D. Cutter, who had served as Secretary of the Council on Medical Education and Hospitals since 1931. Dr. Cutter died after a brief illness on Jan. 22, 1942. It is the desire of the Council that the following resolution be included in the Proceedings of this annual session:

> In the demise of William D. Cutter, M.D., the Council on Medical Education and Hospitals lost a valuable secretary and organized medicine a true friend.
>
> Dr. Cutter's services to scientific teaching, his lifetime devotion to medical education, his unwavering faith in the destiny of American medicine and his career as a medical educator made a splendid contribution to the work of the Council.
>
> His character and ideals happily combined with high ethical values will long be remembered and cherished.
>
> The members of the Council desire to record their appreciation and gratitude for his splendid services and to express their great personal loss in his death.

2. Dr. Herman G. Weiskotten, Syracuse, N. Y., a member of the Council since 1940, assumed the responsibilities of the secretary on March 4, 1942.

3. After a number of conferences, in many of which the Council participated, the U. S. Army and the U. S. Navy early last summer authorized the granting of commissions to junior and senior medical students as second lieutenants in the Medical Administrative Corps Reserve, U. S. Army, or Ensign H V (P), U. S. Navy, with the understanding that they will not be called to active duty until they have completed one year of internship, the choice as to Army or Navy being voluntary. After graduation they are eligible for appointment as first lieutenant, Medical Corps, Army of the United States or Ensign H V (P), U. S. Navy Reserve. The War Department and the Navy Department recently authorized the granting of commissions also to freshmen and sophomore medical students and to students who are bona fide matriculants in approved medical schools. Selective Service has provided for the deferment of all medical students in good standing who fail to meet the physical require-

ments for such commissions in the Army or Navy. Thus there seems to be assurance of a continuing supply of physicians at least for the next three years as future medical officers and for the care of the civilian population. We cannot be sure that the protection now offered premedical students is such as to assure an adequate number of well prepared medical students to meet future needs.

This program, however, does not provide for the training of young physicians beyond the period of a one year internship. Believing that the further education of a certain number of physicians is vital to the future of the country, a committee of the Council and the Advisory Board for Medical Specialties has been appointed, the chief purpose of which will be to work out plans for preserving a percentage of recent graduates for training in the specialties.

4. With regard to the program for speeding up the production of physicians to meet the war needs by accelerating the medical curriculum, the Council is of the opinion that:

The adoption of a program for an accelerated curriculum for approved medical schools during this war period is a decision which should be determined by each medical school.

The decision of a medical school to initiate an accelerated curriculum should be made only after a comprehensive survey of the personnel, facilities and equipment of the school and its ability to give a medical education without deterioration of the quality of the medical instruction and in conformity with the statutes of the various states and the rulings of the state medical boards.

The Council stands ready to make necessary inspections whenever in its judgment such inspections are required to maintain the present high standards of medical education.

The Council believes that financial assistance for needy medical students during the accelerated program is best provided through scholarships or loans.

Similar resolutions have been adopted by the Association of American Medical Colleges and the Federation of State Medical Boards of the United States. In fact, a liaison committee of the Council and the Association of American Medical Colleges has been appointed to confer on this and other problems of mutual interest.

Many of the medical schools have announced that they are planning to adopt an accelerated curriculum. Various plans of acceleration have been adopted, practically all of which involve the elimination of the long summer vacation and the completion of the medical course in approximately three calendar years. Some of the schools plan to admit a new class every nine months, and others will continue to admit only one class annually.

Seven schools have already advanced their senior year, and one hundred and twenty-eight students were graduated in February or March of this year by three of these schools.

Every precaution possible is being taken by the Council to preserve the present high standards of medical education in connection with this acceleration of the medical curriculum.

5. As of March 1, 1942 sixty-five four year medical schools in the United States are approved, one of which is on probation. Recognition of one school was recently withdrawn; this action being taken without prejudice to the students enrolled as of Sept. 1, 1942. In Canada there are nine approved medical schools. In the United States ten schools of the basic medical sciences are included in the approved list, two of them on probation. In Canada there is one approved school of the basic medical sciences. There is also in the United States one school offering only clinical courses which is approved. This school will cease to function with the graduating class of 1942.

Three medical schools were visited during the year, and special reports of progress were received from at least a dozen others.

In cooperation with the Office of Procurement and Assignment, the faculties of medical schools have been classified with respect to availability for medical service in national defense. Affiliated hospital units have also been established, and some of these are in active service. The importance of not permitting any faculty member considered necessary for the operation of a medical school to serve as a member of an affiliated unit has been stressed.

6. The Council's study of continuation courses for practicing physicians is being continued by correspondence and questionnaire. The results are published annually in the Educational Number. In addition there were published in THE JOURNAL in October 1941 and in January and April 1942 opportunities currently available for such study.

7. The members of the Council, the secretary and staff have attended and actively participated in numerous conferences and meetings in medical, educational, hospital, nursing and allied fields, including the Clinical Congress of the American College of Surgeons, the American Hospital Association, National League of Nursing Education, American Dental Association, the American Council on Education and the revision of the Manual of the Essentials of Good Hospital Nursing Service.

8. The theme of the Annual Congress on Medical Education and Licensure was medical education in a war emergency and also the care of the civilian population. The program included addresses by the surgeon generals, or their representative, of the Army, Navy, Public Health Service and the director of Selective Service. Over five hundred medical educators attended and received first hand information on these vital issues.

9. The problem presented by the scarcity of interns and residents is being carefully studied by the Council with a view to preserving the educational aspects of hospital training programs even though the hospital staffs are being depleted by inductions into the nation's armed forces. Hospitals are being advised to conserve the doctors' time for the purely professional work in the hospitals and to delegate the technical work to nonprofessional attendants wherever possible.

10. The Committee on American Health Resorts of the American Medical Association has requested the Council to cause its field inspectors to make inspections of health resorts. The Council has agreed to visit and inspect several spas to ascertain the advisability of assuming responsibility for such a program.

Furthermore, it is understood that a request is to be presented to the House of Delegates at this session for the inspection and approval of schools for the training of medical record librarians.

It was the sentiment of the Council that, if it is to take on these new duties, such inspections and approvals should be in consonance with the usual procedures of the Council.

11. All existing specialty boards, fifteen in number, are currently approved by the Council, as well as subdivisions of the specialties of internal medicine and surgery recognized by the boards in internal medicine and surgery. By agreement with the several boards, concurrent approval of residencies, fellowships and other opportunities for graduate study in the specialties has been established and is apparently operating to the satisfaction of all concerned.

12. The Council has now in process of compilation a volume to constitute part II of the Council's study of graduate medical education, which will deal with institutional apprenticeships, namely internships, residencies and fellowships. Part I, which was completed in 1940, covered a field study of continuation courses for practicing physicians.

13. A thorough revision of the "Essentials of an Approved Internship" is presented herewith for ratification (see appendix to Report).

14. A summary of the work of the hospital division of the Council for the fiscal year March 1, 1941 to March 1, 1942, including hospital registration, hospitals approved for intern training, for residencies and fellowships in the specialties, as well as the status of technical schools under the supervision of the Council, follows:

Hospital Register

Hospitals registered, March 1, 1941	6,291
Registered during the year	207
Closed or transferred to unclassified file	140
Hospitals registered, March 1, 1942	6,358

Hospitals Approved for Training Interns

Hospitals approved, March 1, 1941	721
Approved during the year	30
Removed from approved list	19
Hospitals approved, March 1, 1942	732

Approved Residencies and Fellowships

Hospitals approved for residency training, March 1, 1941	606
Approved during year	31
Removed from approved list	5
Hospitals approved for residency training, March 1, 1942	632

TECHNICAL SCHOOLS

Approved Schools for Clinical Laboratory Technicians

Approved schools, March 1, 1941	152
Approved during the year	29
Removed from approved list	7
Approved schools, March 1, 1942	174

Approved Schools for Physical Therapy Technicians

Approved schools, March 1, 1941	16
Approved during the year	1
Removed from approved list	1
Approved schools, March 1, 1942	16

Approved Schools of Occupational Therapy

Approved schools, March 1, 1941	6
No schools approved or removed during the year	
Approved schools, March 1, 1942	6

INSPECTIONS OF HOSPITALS AND TECHNICAL SCHOOLS

Hospitals

For: Intern training	83
Residencies and fellowships	81
Intern training and residencies	37
Registration	11
Total	212

Inspections

Individual residencies and fellowships investigated	235

Technical Schools

Clinical laboratory schools	50
Physical therapy schools	9
Occupational therapy schools	2
Total	61

14. During 1941 a complete survey was made of the biographic records of approximately seven thousand physicians practicing medicine in the United States on the basis of medical studies abroad. For a period of twelve years beginning in 1926 the credentials of these physicians were verified by official correspondence with the medical schools abroad, either directly or through the diplomatic services. When it became impossible to continue this system of verification, state medical licensing boards were cautioned to scrutinize carefully all such credentials and to evaluate them with deliberation. The policy was introduced, to become effective with the American Medical Directory in 1942, to exclude from publication those graduates whose credentials obtained abroad have not been officially verified and who do not hold licenses to practice in the United States. The key symbol used in the Directory to denote the medical school and year of graduation, as, for example, Eng.7,'07, will be followed by a * (Eng. 7, '07*) indicating that the credential has not been officially verified by the American Medical Association but is the M.D. degree or equivalent certificate accepted by the licensing board as meeting the educational requirements for licensure.

15. Major publications during 1941 and up to the time of the preparation of this report compiled by the Council and widely distributed included:

Hospital Service in the United States, containing the register of acceptable hospitals and indicating hospitals approved for internships, residencies and fellowships.

State Board Licensure Statistics, a compilation based on the records of state licensing boards and specialty examining boards.

Medical Education in the United States and Canada, including a list of medical schools currently approved and statistical compilations regarding undergraduate and graduate medical education.

Proceedings of the Annual Congress of Medical Education and Licensure.

Choice of a Medical School.

Approved Colleges of Arts and Sciences, a compilation based on lists of institutions approved by national and regional agencies acceptable to the Council.

Schools Approved for Training Clinical Laboratory, Physical Therapy and Occupational Therapy Technicians.

16. Because of the added responsibilities placed on the Bureau of Medical Economics and the Council by the national emergency, no report is available concerning the resolution adopted by the House of Delegates in 1938 requesting the Bureau of Medical Economics and the Council to undertake a study of the practice in hospitals of pathology, radiology, anesthesia and physical therapy.

17. The Twenty-First Annual Census of Hospitals covered the year 1941 and was reported in the Hospital Number of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 28, 1942.

The census covers 6,358 registered hospitals with a total capacity of 1,324,381 beds. The increase in number of beds yearly has been uniformly in the neighborhood of 30,000, but the present annual census showed a net increase over the previous year of 98,136 beds. This increase alone is the equivalent of one 269 bed hospital for each day in the year, Sundays and holidays included.

The number of patients admitted during the year was 11,596,188, of whom 10,646,947 were to general hospitals alone.

Births in hospitals number 1,404,940. The rate of increase in hospital births was double that of the previous year.

This latest census of hospitals produced some valuable data which were obtained this year for the first time. Included in these is the number of technical personnel employed in all hospitals. There are, for example, 9,609 full time laboratory technicians and 5,534 full time x-ray technicians. The report includes also dietitians, physical therapists, pharmacists, medical record librarians, other librarians, medical stenographers, occupational therapists, dental hygienists and social service workers.

Other new items covered in this survey were:

Number of patients operated on, 5,201,650, or 44.9 per cent of all patients admitted.

Number of deaths in all hospitals, 510,158, or 4.4 per cent of the patients admitted.

Necropsies, 125,640, or 24.6 per cent of the total deaths.

The response to the Twenty-First Annual Census of Hospitals was unusually good, there being only 41 hospitals in a total of 6,358 from which no response was obtained.

18. Finally, the Council desires to emphasize again that great caution should be exercised by medical educators and hospital administrators that there be no lowering of the standards of medical education and hospitals in our efforts to assist the federal and state officials to maintain adequate medical care for the military forces and the civilian population.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS,
RAY LYMAN WILBUR, Chairman.
REGINALD FITZ.
RUSSELL L. HADEN.
CHARLES GORDON HEYD.
J. H. MUSSER.
HARVEY B. STONE.
H. G. WEISKOTTEN, Secretary.

APPENDIX TO REPORT OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

ESSENTIALS OF AN APPROVED INTERNSHIP

I. INTRODUCTION

1. The primary function of a hospital is to provide facilities where the sick and injured may be given scientific medical care.

2. The operation of a well organized, effective program for the training of interns enhances the quality of care rendered to the sick and in nowise conflicts with the chief purpose for which the hospital is maintained.

3. An important purpose of the internship is to supplement the undergraduate medical course by a well rounded experience of closely supervised clinical practice in diagnosis and therapy.

4. Hospitals which are approved for the training of interns accept a serious responsibility to their interns and to the communities in which they may later practice.

5. The internship is one of the most important phases of medical education. Internships designed without a well supervised educational program, or arranged merely to provide hospitals with resident personnel to relieve visiting physicians of tasks which they do not wish to perform, cannot be approved.

II. THE INTERNSHIP

1. *Basis of the Internship.*—The internship is a form of apprenticeship. The intern assists in the care of patients and

receives in return instruction from the hospital staff in the clinical and laboratory aspects of his profession.

2. Length of Internship.—An internship should be of not less than twelve months' duration. Longer periods of service are desirable because they permit a more satisfactory educational program and allow the intern sufficient time in which to be trained adequately to assume increasing responsibility in various fields of medicine.

3. Types of Internship.—The Council approves "rotating," "mixed" and "straight" internships.

A "rotating" internship is defined as one which provides supervised experience in internal medicine, surgery, pediatrics, obstetrics and their related subspecialties, together with experience in laboratory and radiologic diagnosis.

A "mixed" internship is defined as one which provides supervised experience in two or more, but not in all, of the clinical divisions named.

A "straight" internship is defined as one which provides supervised experience in a single department, although it may include limited opportunity for work in a related subspecialty. Straight internships are now approved in internal medicine, surgery, pediatrics, obstetrics (with or without gynecology) and pathology.

In rotating and mixed internships of a year's duration the time allotted to internal medicine should equal or exceed the time given to any other service. Not more than six months' time in a year's rotating or mixed internship should be devoted to any one branch of the service, including its related specialties. Too frequent a rotation of assignments in such internships is undesirable. Arrangements should be made so that each intern shall devote at least two consecutive months respectively to internal medicine and to surgery.

III. Hospitals Eligible for Approved Internships

The experience of the Council indicates that the requirements for an approved internship can be met only in a general hospital registered by the American Medical Association, admitting at least 2,500 patients or more per year, having an average daily census of at least 85 patients, exclusive of the newborn and providing a sufficient number and variety of patients in the several branches of medicine in which it undertakes to train interns. For the purpose of this section, patients who are not available to the interns for clinical study are not included.

IV. The Hospital Staff

1. The Staff.—The staff, both visiting and intern, should be composed of physicians who are graduates of medical schools acceptable to the Council. The visiting staff should be composed of physicians (*a*) who are of unquestioned professional and moral integrity, (*b*) who are proficient in the fields of practice to which they devote themselves, (*c*) who give personal attention to the patients under their charge and (*d*) who pledge themselves, both individually and as a group, to provide ample instruction to the intern staff and to cooperate in their work.

V. Clinical Records

1. Histories.—Adequate records should be maintained. The attending physician or surgeon should be directly responsible for the accuracy and completeness of clinical records concerning all patients under his care.

2. Endorsement of Records.—All case records should show by signature the names of the persons who have written them or their individual parts. Orders for treatment or for special diagnostic studies and progress notes should be signed by the person who writes them. Case histories and physical examinations completed by interns should give evidence of having been verified by the attending physician.

3. Filing and Indexing Records.—A competent medical record librarian should be in charge of the filing and indexing of records. To be of educational value, all case records should be readily available for special study or for reference work. When a patient is readmitted to the hospital, all previous records of his case should be obtainable without undue loss of time. Besides the usual indexes of patients by name and number, there should be an index arranged according to primary and secondary diagnoses; all surgical procedures should be listed, and the names of physicians who refer patients to the hospital should also be recorded. Statistics concerning the hospital's clinical work should be compiled monthly and should be available at all times to the medical staff. An analysis of these figures should be included in the annual report and should be classified by departments, i. e. internal medicine, surgery, obstetrics, pediatrics (excluding the newborn), gynecology, ophthalmology, otolaryngology and so on, presenting for each department at least the following data concerning private and ward services:

Number of patients admitted or discharged.
Number of hospital days of care or average daily census.
Deaths and necropsies.
Surgical procedures.

VI. Laboratories

1. Equipment.—There should be clinical and pathologic laboratories in the hospital, under competent direction. The laboratory or laboratories should be equipped and staffed to perform ordinary routine tests, including bacteriologic, serologic, chemical, basal metabolic and tissue examination.

2. The Pathologist.—The pathologist should hold the degree of doctor of medicine from an approved medical school and should have qualifications in pathology acceptable to the Council. He should give to the hospital sufficient time to enable him (*a*) to supervise adequately the work done in the main pathologic laboratory of the hospital and in its branch laboratories if any, (*b*) to examine or supervise the examination of all tissues removed in surgical operations and to furnish reports of their gross and microscopic findings, (*c*) to perform or supervise the performance of all necropsies conducted in the hospital and render a full report of the findings, (*d*) to assist in the teaching of interns, (*e*) to be available for consultation with members of the attending and intern staff meetings and conduct or participate in clinical-pathologic and departmental conferences.

3. Necropsies.—The hospital should provide proper facilities for the conduct of postmortem examinations in the presence of interns and staff. The necropsy rate has come to be recognized as an index of the scientific interest of the medical staff, and well performed postmortem examinations enable progressive physicians to improve their clinical ability. No hospital will be approved for intern training which does not maintain each year a record of necropsies performed in at least 15 per cent of its deaths exclusive of stillbirths and cases released to legal authorities. Beginning with the calendar year 1943, a minimum of thirty-six necropsies a year will also be required.

4. Records.—A copy of each examination performed in the laboratory of pathology should be retained in the department in addition to the copy filed on the patient's clinical record. All these examination reports should be indexed by name, number and diagnosis. Slides for microscopic study of specimens removed at operation or by necropsy should also be filed in the laboratory.

VII. Radiology

1. Equipment.—This department should be equipped at least with suitable protected apparatus for roentgenographic and fluoroscopic procedures. The rooms provided for fluoroscopy and for viewing roentgenograms should be large enough to accommodate comfortably both interns and attending physicians during the examination of patients or interpretation of films.

2. The Radiologist.—The radiologist should hold the degree of doctor of medicine from an approved medical school and should have qualifications in radiology acceptable to the Council. He should give to the hospital sufficient time to supervise adequately the technical work of the department, to perform or supervise fluoroscopic examinations, to interpret films, to consult with staff physicians, and to instruct the interns. He should also attend staff meetings and the meetings of his department.

3. Records.—A copy of each examination report should be kept in the department in addition to the one filed in the patient's record. These reports and their original films should be filed and indexed by name, number and diagnosis.

VIII. Medical Library

There should be a medical library, in charge of a competent librarian, located where it is readily accessible to the interns and staff and containing a useful collection of recent editions of standard text and reference books and current files of not less than ten of the representative medical journals. Interns should be encouraged to use the library in connection with their clinical work and may properly be asked to report on current

medical opinion concerning any special case at the bedside or to review current literature on any selected topic more formally at staff conferences or at journal club meetings that may be organized for the purpose of stimulating an interest in reading.

IX. Organization for Intern Training

1. The staff should be organized into departments or sections representing such specialties as internal medicine, surgery, pediatrics, obstetrics, pathology and radiology, in order to administer the professional services of the hospital and to supervise the program of intern training to best advantage. Overdepartmentalization should be avoided, although in large hospitals departmentalization may extend to include such other specialties as ophthalmology, otolaryngology, orthopedic surgery, urology, neurology and psychiatry. Each department or section should have a chairman or department head to serve for at least a year. He should be well qualified for this position by experience in his special field, should be responsible for the general conduct of the clinical work in his department and should help to formulate and execute the intern training plan to be carried out in his department. Frequent rotation of attending physicians in charge of the various services should be avoided. Assignments should be made so that the intern has opportunity each day to meet his attending physician for the conduct of systematic ward rounds or clinics and for the study of the patients under his care. In hospitals where the management of private patients is part of the intern's responsibility, no intern should be called on to assist at any one time an unreasonable number of attending or visiting physicians.

2. *Conferences.*—The staff, either as a whole or by departments, should conduct periodically and at least once a month, staff or departmental meetings in which the work of the various clinical or laboratory services is thoroughly analyzed. Interns should be expected to attend and to take an active part in these meetings. Each month there should be one or more clinical-pathologic conferences. In addition, there should be such departmental conferences as the current activities of the various departments may require. These conferences should be educational in nature and more than a perfunctory demonstration of interesting material. As has been suggested, the intern also should be encouraged to read medical literature in connection with his clinical work and may properly be asked to report formally on current medical opinion concerning any special case.

3. *Intern Committee.*—There should be a committee of the staff, chosen from the chairmen of the several departments in the hospital, charged with the duty of organizing, supervising and evaluating the plan of intern instruction. The teaching obligations of individual staff members cannot be delegated to this committee but should be supervised by it.

X. Nature of the Intern's Duties

Each intern on duty in any clinical department should write or dictate the history, physical examination and his own diagnostic impression of all patients assigned to him. He should have laboratory work assigned to him of such nature as to give him familiarity with clinical laboratory methods and to develop in him competence in the use of all those which the average physician may be called on to perform. The nonoperative treatment of each patient should, in the main, be his responsibility under critical guidance by the visiting physician.

The intern's record should be checked within twenty-four hours by a competent supervising physician, calling attention to errors in observation and adding supplementary notes containing any relevant data which the intern may have omitted. If the intern's record is acceptable, the attending physician should countersign and thus approve it. The intern should enter notes of progress on the record, describing the patient's clinical course from time to time and make sure that all treatments or special diagnostic studies are correctly recorded. When a patient is discharged, the intern should write a concluding note which describes the final diagnosis and the patient's condition as he leaves the hospital. This should be countersigned by the attending physician.

XI. Teaching Program

1. *Bedside Teaching.*—The most important phase of intern instruction consists in well conducted teaching at the bedside. By this is meant systematic instruction of the intern by the attending physician with an ample discussion of the history, the clinical and laboratory findings, the diagnosis and the treatment of each patient. To conduct such teaching properly is the duty of the attending physician in direct charge of the patients assigned to the intern. It cannot be delegated to others, though it may be supplemented by supervision of the intern's work by junior staff members or resident physicians. Duties which have no educational value should be avoided as far as possible.

2. *Assignment of Cases.*—The teaching program should provide ample time for the intern to study and give thorough care to all patients assigned to him. An excessive number of patients is not conducive to careful work; indeed, undue pressure of routine tasks in a hospital may lead an intern to form habits which are undesirable and even harmful. For each intern assigned to a major service, such as internal medicine, surgery, obstetrics or certain specialties, such as neurology, an admission rate averaging not more than two patients a day is desirable.

3. *Internal Medicine.*—This department should afford each intern an adequate amount of instruction and experience in general medicine and in such special medical technics as transfusion, intravenous and other parenteral therapy, and paracentesis. Preferably there should be facilities for the study of patients with tuberculosis, and with contagious, nervous and mental diseases. Each intern should receive careful instruction in modern diet therapy with technical assistance from trained dietitians. The social aspects of medicine should also receive proper emphasis.

4. *Surgery.*—Surgical training should be planned to emphasize diagnosis and preoperative and postoperative treatment of surgical cases rather than skill in operative technic. Thus the intern's work in surgery should be rather that of an assistant than of an operator. The dressing of surgical wounds should be regarded as an important part of his experience, thus giving him a particularly valuable opportunity to observe carefully the immediate effects of surgical procedures and their treatment. He should obtain instruction and experience in administration of various types of anesthetics under the supervision of a trained anesthetist.

5. *Obstetrics.*—The intern should obtain training and experience by delivering under supervision at least 10 patients. At other deliveries he should act as an assistant, not merely as an anesthetist.

6. *Pathology.*—The intern should receive experience in clinical laboratory work to perfect his skill in routine laboratory procedures. He should also receive instruction from the pathologist in the procedures of pathologic diagnosis. He should attend and, when possible, assist at necropsies, receiving instruction in technic and in pathologic interpretation. He should be required to be familiar with the pathologic studies of surgical specimens and necropsy material which concern his own patients. No other assignment should be permitted to interfere with his attendance at the postmortem examination of any case which has been under his care. Whenever possible, he should assist in the preparation and presentation of the clinical-pathologic conference when cases assigned to him are being reviewed.

7. *Outpatient Department.*—It is desirable that each intern should have supervised experience in outpatient work under circumstances comparable to the office practice of medicine. Outpatient clinics to which interns are assigned should be operated in close affiliation with corresponding services in the hospital, thus encouraging careful follow-up work and observation of patients over a long period of time.

XII. Miscellaneous

1. *Record of Interns' Work.*—Certain state medical examining boards, medical schools and other agencies may desire detailed information regarding the interns' training, and therefore it is suggested that hospitals keep a record of each intern's work. Such information may be supplied to the superintendent or record office by the intern himself on special forms where space is provided for data such as the period of time covered, the service, the number of patients admitted on service, the number of histories and physical examinations completed by the intern, the number of anesthetics given by him, the number of operations performed by him and the number in which he

has assisted, the number of deliveries conducted by him and the number in which he has assisted, the number of necropsies attended, the hours spent in the laboratory, and the number of lectures, clinics and conferences attended.

2. *Rules Regarding Interns.*—The hospital should supply each intern with written or printed rules defining his duties and privileges.

3. *Interns' Living Quarters.*—The hospital should provide for the intern comfortable living quarters, healthful food and suitable recreational opportunities.

4. *Interns' Health.*—The hospital should be responsible for the interns' health, at least to the extent of providing at the beginning of each intern's service a careful physical examination, including a roentgenogram of the chest and immunization against communicable diseases. There should be at all times a readily accessible consultation service for interns with some member of the staff definitely assigned to this work. Periodic x-ray examination of each intern's chest at six month intervals during his term of service is desirable.

5. *Relationship Between Hospital and Intern.*—To avoid misunderstanding, it is desirable that each intern at the time of his appointment should enter into a formal agreement with the hospital defining mutual obligations. Such agreement should be honorably fulfilled by both parties. The breaking of it by either a hospital or an intern is not condoned by the Council. Whenever complaint is made of a breach of agreement it is the policy of the Council to ask each of the parties to submit an explanatory statement. Such statements become a part of the physician's and the hospital's record.

XIII. Admission to the Approved List

1. *Application for Approval.*—Hospitals that desire to be accredited for intern training should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago. For this purpose forms in duplicate will be supplied on request. They should be filled out with care by the superintendent or by some member of the staff who is familiar with the hospital's intern program, and one copy should be returned to the Council.

2. Approval for the training of interns is granted for the current year only and is subject to renewal annually. When conditions warrant it, approval may be withdrawn at any time.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

Regular meetings of the Council on Scientific Assembly were held during the week of the annual session of the Association in Cleveland in June 1941 and in Chicago on Oct. 31, 1941.

Sessions for General Practitioners

In accordance with the terms of the report of the Reference Committee on Sections and Section Work with respect to a resolution requesting the creation of a Section on General Practice, which was presented to the House of Delegates at the Cleveland session, two Sessions on General Practice in the Section on Miscellaneous Topics will be held at the Atlantic City session. The Council on Scientific Assembly appointed Dr. Lucien Stark of Norfolk, Neb., to serve as chairman and Dr. Wingate M. Johnson of Winston-Salem, N. C., as secretary to arrange a program for the sessions for general practitioners at Atlantic City.

Session on Legal Medicine

One session in the Section on Miscellaneous Topics will be devoted to a program on legal medicine. The Council appointed Dr. William C. Woodward of Washington, D. C., to serve as chairman and Dr. Alan R. Moritz of Boston as secretary for this session. A program will be presented during the current meeting of the Association.

The Pan American Feature of the Atlantic City Session

The Council on Scientific Assembly submitted a recommendation to the House of Delegates at the Cleveland session in 1941 to the effect that the Atlantic City session in 1942 be in the nature of a Pan American session, and this recommendation was approved by the House of Delegates. It was the hope of the Council and of all concerned that it would be possible to have present at the Atlantic City session a large number of the physicians of South and Central America, Mexico and Canada, but, greatly to the regret of the Council and of the officers and members of the American Medical Association, conditions created by the war have made it impossible to carry out the original plans. However, several distinguished physicians from southern countries and from Mexico and Canada have accepted invitations to participate in the scientific work of the Association as presented through the General Scientific Meetings and the meetings of the sections of the Scientific Assembly.

Unless emergencies created by the war interfere, a number of physicians from the Latin American countries and from Canada will contribute to the scientific program to be presented during the Atlantic City session.

It is the very earnest desire of the American Medical Association that cordial and lasting professional relations be established and maintained between the physicians of the United States and those of all the nations of the Western Hemisphere, and, although it has not been possible to carry out fully the proposed plans for the current annual session, it is the hope of the Council on Scientific Assembly that when the war is over it will be possible to arrange for an Inter-American session at which the American Medical Association will be honored by the presence of many of the members of scientific medical organizations of all the countries in North and South America.

The Council desires to express its most grateful appreciation to Dr. Hugh S. Cumming, Dr. Wilbur A. Sawyer and Dr. Howard R. Hartman, members of the Advisory Committee on Pan American Session, for their helpful service in connection with the efforts that were made to carry out the Pan American program proposed for the Atlantic City session.

Determination of Serum Sensitivity

At the Cleveland session in 1941 Dr. Walter W. Mott of New York submitted a resolution providing for the appointment of a committee to study the determination of serum sensitivity. This resolution was referred to the Council on Scientific Assembly in accordance with the recommendations offered by the Reference Committee on Miscellaneous Business and was given careful consideration by the Council at its meeting in October.

It was unanimously agreed by the members of the Council on Scientific Assembly that the question of determination of serum sensitivity does not appear to have been sufficiently elaborated from a scientific point of view to warrant a recommendation at this time.

The Scientific Program

The official program of the Atlantic City session is submitted as a part of the report of the Council on Scientific Assembly.

Within the last few years the officers of the sections of the Scientific Assembly and the Council have persisted in an effort to make the scientific programs more generally interesting and helpful and have encouraged joint section meetings, symposiums and panel discussions. It will be noted through reference to the official program that, because these innovations seem to have met with general approval, several sections have arranged for joint meetings and panel discussions this year.

The Council desires to commend the officers of the sections of the Scientific Assembly for their earnest and efficient service and to express its grateful appreciation to these officers and to thank all those who will appear as contributors to the program to be presented at the 1942 session of the Association.

Respectfully submitted.

James E. Paullin, Chairman.
Clyde L. Cummer.
J. Gurney Taylor.
A. A. Walker.
Frederick A. Coller.
Fred W. Rankin, President-Elect. } Ex officio.
Morris Fishbein, Editor, The Journal. } Ex officio.
Olin West, Secretary. } Ex officio.

MEDICAL LEGISLATION

STATE MEDICAL LEGISLATION

Arizona

Bill Passed.—S. 14-X has passed the senate, to amend the osteopathic act enacted in 1941. As passed the bill (1) redefines osteopathy to mean "that system of treatment and healing of abnormalities of the human mind and body as taught and practiced in the standard colleges of osteopathy," (2) eliminates the subject of surgery as an examination requirement and (3) prescribes conditions under which osteopaths may practice major surgery and confines such practice to hospitals or institutions "osteopathically owned or controlled."

Bills Introduced.—S. 3-X proposes to make it a misdemeanor for any person infected with a venereal disease and, knowing of that condition, to engage in sexual intercourse. A second such offense is to be deemed a felony. S. 2-X proposes to authorize the state department of health to detain, hospitalize and quarantine any person known to be infected with a venereal disease. A person so detained and quarantined who wilfully refuses to submit to the treatment prescribed by the department is to be guilty of a misdemeanor. H. 18-X proposes to suspend in favor of any person during his active service with the military or naval forces of the United States the annual registration fees required by law.

New Jersey

Bill Passed.—A. 229 passed the assembly, April 13, proposing so to amend the chiropody practice act as to provide, among other things, that chiropody is "the diagnosis of any ailment of the human foot, or the treatment thereof by any one or more of the following means: local medical, mechanical, minor surgical, manipulative and physio-therapeutic or the application of external medical or any other of the aforementioned means except minor surgical to the lower leg and ankle for the treatment of a foot ailment; not including, however, the treatment of tuberculosis, osteomyelitis, malignancies, syphilis, diabetes, tendon transplantations, bone resections, amputations, fractures, dislocations, the treatment of varicose veins by surgery or injection, the administration of anesthetics other than local, the use of radium, the use of x-ray except for diagnosis, or the treatment of congenital deformities by the use of a cutting instrument or electrosurgery. The term 'local medical' hereinbefore mentioned shall be construed to mean the prescription or use of a therapeutic agent or remedy where the action or reaction is intended for a localized area or part."

Bills Introduced.—A. 292 proposes to require a medical inspector who observes or finds a physical defect in the examination of a school child to notify the parents as to the defects found. If the parents fail to provide remedial treatment within a reasonable time, the child may be excluded from school until such time as remedial treatment has begun. A. 295, to amend the act relating to the public schools of the state, proposes to make it mandatory for the board of education to require immunization to diphtheria as a prerequisite to attendance at school or to require proof of immunity. A. 296, to amend the law relating to compulsory vaccination or revaccination of teachers and pupils in the public schools, proposes to make it mandatory for a board of education to exclude from school any teacher or pupil who has not been successfully vaccinated or revaccinated, unless the teacher or pupil shall present a certificate signed by the medical inspector appointed by the board that the teacher or pupil is an unfit subject for vaccination.

MEDICAL ECONOMIC ABSTRACTS

EXPENDITURES FOR MEDICAL CARE

During the period of 1934-1936 the United States Bureau of Labor Statistics, with the assistance of other government agencies, made numerous studies of consumer expenditures in the lower income brackets. These studies have now been combined in a "Summary Volume"[1] covering 14,469 families, with an average of 3.6 persons and an average income of $1,458 located in forty-two cities with a population of over 42,000. No families in receipt of relief or with an annual income of less than $300 during the year were included, nor any family in which the chief wage earner, classified as a clerical worker, received over $2,000 a year, but no upper limit was placed on the income of wage earners or on the total family income. Only 1.0 per cent of the families had an average income of $2,396 or an average per person of over $1,200.

TABLE 1.—*Expenditures for Medical Care*

Annual Net Income	Average Number of Persons per Family	Medical Care: Average Expenditure: Per Family	Medical Care: Average Expenditure: Per Person	Per Cent of Total Current Expenditure
All families	3.60	$ 59	$16	3.9
$500 to $600	3.11	22	7	3.4
$600 to $900	3.15	33	10	3.9
$900 to $1,200	3.41	42	12	3.8
$1,200 to $1,500	3.54	53	15	3.9
$1,500 to $1,800	3.62	64	18	3.9
$1,800 to $2,100	3.76	79	21	4.2
$2,100 to $2,400	4.03	81	20	3.8
$2,400 to $2,700	4.27	97	23	4.0
$2,700 to $3,000	4.37	109	25	4.0
$3,000 and over	4.81	115	24	3.5

Table 1 summarizes the expenditures for medical care together with the comment:

"The figures on medical care expenditure represent medical, dental and hospital services purchased in general on an individual fee basis, drugs and medicines, medical appliances, and health insurance premiums. Unpaid medical bills, if incurred within the year of the investigation, are included as expenditures. The total cost of the medical services received by the families represented in the study was undoubtedly somewhat larger than this amount. Clinic and ward services are supported in part by endowments and contributions to hospitals and in part by services contributed by the medical staff. Some, but not many, of these families reported the payment of clinic fees, and as many as 4 per cent paid for beds in hospital wards. Information on the subject of free medical care was obtained only in New York. For the 897 white families of employed wage

TABLE 2.—*Families Reporting Service Charged For and Service Free*

	Families Reporting Service: Charged For	Families Reporting Service: Free
Room in hospital ward	28	6
Clinic	112	4
General practitioner:		
Home visit	345	6
Office visit	360	2
Specialist	138	2

1. William, Faith M., and Hanson, Alice C.: Money Disbursements of Wage Earners and Clerical Workers, 1934-36, Summary Volume, Bull. 638, Bureau of Labor Statistics, 1941.

earners covered in the New York City investigation," the figures given in table 2 show "the number of families reporting free service, together with those reporting charges for corresponding service."

Some doubt is thrown on the accuracy of the figures concerning free service by the fact that in 1936 there were 2,372,866

TABLE 3.—*Distribution of Items of Medical Care*

	Average for All Families Surveyed
General practitioner:	
Home visit	$ 6.95
Office visit	6.86
Dentist	10.84
Medicine and drugs	9.70
Specialist and other practitioner	8.92
Accident and health insurance	4.05
Hospital, private room	3.60
Hospital, beds in ward	1.90
Eyeglasses	3.22
Clinic	.45
All other medical expenses	2.69

patients who received service in outpatient departments of New York City.[2] This is 32 per cent instead of 1.2 per cent that was found among 897 families studied.

2. Rosenbohn, Meyer: In the Matter of Pay for Doctors in Municipal Dispensaries, New York Medical Week **17**:4 (Aug. 27) 1938.

The expenditure of the average family in this group for all forms of medical care was $59.18, divided among the items shown in table 3.

EXPANSION OF LOCAL HEALTH ORGANIZATION

Nearly all local public health services except in the large cities have been organized within the last twenty-five years. There were only fourteen counties in the United States in 1915 with full time local service. After the passage of the Social Security Act in 1935 growth was rapid until on June 30, 1941 1,669, or 54 per cent, of the counties in the United States had such full time service. Six hundred and sixty-three of these were single district units, four hundred and twenty-six local district units and five hundred and eighty state district units. On the same date there were, in addition to those county services, one hundred and three cities with full time municipal health units. These one thousand six hundred and sixty counties and one hundred and three cities represented approximately 70 per cent of the total population of the forty-eight states and the District of Columbia. Additional full time service units are now being organized in many defense areas.[1]

1. Kratz, F. W.: The Present Status of Full Time Local Health Organization, Pub. Health Rep. **57**:194 (Feb. 6) 1942.

WOMAN'S AUXILIARY

Texas

The Northeast Texas District auxiliary met, recently, at Longview. Dr. Preston Hunt, Texarkana, spoke on national defense. A talk illustrated by motion pictures was given by Mrs. Walton Sumner on South America.

The Dallas County auxiliary met, recently, at the Dallas Country Club with one hundred and twenty members and four guests present. The auxiliary has for one of its special projects this year a study of antepartum care.

The Bexar County auxiliary met, recently, in San Antonio with one hundred and five members and five guests present. Mrs. S. F. Harrington, Dallas, president of the state auxiliary, spoke on the subject "Our Opportunities." Dr. Frank N. Haggard, San Antonio, spoke on "The Value of Organized Medicine." The auxiliary voted to give $40 to the Community Chest. The auxiliary has been given the permission of the Bexar County Medical Society to use its club room, the Pill Box, once a month for parties for soldiers in service. Invitations have been extended to more than three hundred physicians in the army and their wives to participate in the activities of the Bexar County Medical Society and auxiliary.

Capt. Martin Adler, from the Air Corps Basic Flying School, Pottsboro, addressed the Grayson County auxiliary, recently, at Denison, on "The Cause of Rejection of Draftees and What Can Be Done About It." President Mrs. Lipscomb announced that the theme of the programs for the year would be the doctors' wives and national defense.

The Tom Green eight county auxiliary met on January 5 in the home of Mrs. Aubrey L. Lewis, San Angelo, with eight members and two visitors present. Mrs. Mildred M. Campbell, area recreation supervisor of the WPA, spoke on "Soldiers' Recreational Problems."

West Virginia

The Woman's Auxiliary to the McDowell County Medical Society met, recently, at the Appalachian Building in Welch. Mrs. H. P. Evans, president, called the meeting to order, and Mrs. Welch England, state president, spoke on "Nutrition and a World Crisis." A motion was carried to donate $10 to the Crippled Children's Society. The *Hygeia* Committee reported twenty-five subscriptions for the schools.

The Woman's Auxiliary to the Raleigh County Medical Society met recently at Beckley. Mrs. E. Newton DuPuy, president, presided. There were thirty-three members and guests present. Miss Mary Virginia Gill, executive secretary of the Raleigh County Tuberculosis Association, spoke on the tuberculosis program. Dinner was served and then several tables of bridge were formed.

Wisconsin

The Winnebago County medical auxiliary met recently at Oshkosh and elected the following officers: president, Mrs. W. N. Linn; president-elect, Mrs. G. C. Owen; secretary-treasurer, Mrs. E. B. Williams; parliamentarian, Mrs. J. W. Lockhart. A report on the national session in Cleveland in June was given by Mrs. Marvin Steen, who attended as a delegate. Mrs. T. D. Smith of Neenah reported on the state meeting held in Madison in September.

The Rock County auxiliary has been active in placing copies of *Hygeia* in homes, schools and libraries and in carrying out philanthropic projects. The Janesville group has worked for the benefit of Mercy Hospital and the Beloit members for the municipal hospital. All have cooperated in serving Pinchurst, providing gifts for all patients at Christmas time and offering entertainment from time to time.

The auxiliary to the Winnebago County Medical Society decided to place *Hygeia* in beauty parlors in Oshkosh, Neenah and Menasha.

Nineteen members met at the home of Mrs. Henry Peters, Oconomowoc, for the meeting of the Waukesha County medical auxiliary. The annual election resulted as follows: president, Mrs. T. H. Nammacher, Oconomowoc; president-elect, Mrs. J. C. Frick, Waukesha; vice president, Miss Hertha Voje, Oconomowoc; secretary, Mrs. Floyd W. Aplin, Waukesha, and treasurer, Mrs. W. H. Oatway, Waukesha. Reports of the state meeting held in Madison were given by Mrs. Oatway, delegate, and Mrs. W. T. Murphy, alternate.

A former national and state president of the auxiliary, Mrs. R. E. Fitzgerald, Wauwatosa, spoke to the Rock County auxiliary recently. Mrs. Fitzgerald, who is also international president of Gamma Phi Beta sorority, is serving as National Parliamentarian of the Auxiliary to the American Medical Association. She stressed study clubs as a project, suggesting a program of legislation, the nutrition campaign of the American Medical Association and book reviews. Guests at the meeting included Mrs. E. P. Bickler, Milwaukee, state treasurer; Dr. Jessie Allen, Beloit, who organized the county auxiliary; Dr. J. R. Harvey, Footville, vice president of the Rock County Medical Society, and Dr. W. T. Clark, councilor for this district.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Changes in Health Officers.—Dr. Caroline H. Callison, Chatom, has been named health officer of Coosa County to succeed Dr. William H. Goff, Rockford, who resigned to enter private practice, it is reported.——Dr. Isaac N. Jones, Greensboro, has been appointed in charge of the Hale County health unit, succeeding Dr. Eldridge T. Norman, Greensboro, who resigned to resume private practice.

Center for Poliomyelitis.—A new infantile paralysis center was recently opened at the Tuskegee Institute, forming a special unit of the John Albion Andrew Memorial Hospital. It is a three story fireproof building equipped with modern facilities, including a gymnasium with treatment pool, whirlpool arm and leg baths and electrotherapeutic machines, plaster, brace fitting and physical therapy rooms, sun deck, patient wards and laboratory. The center was made possible through a grant of more than $172,000 from the National Foundation for Infantile Paralysis. A recent grant of $30,000 will assist in the operation of the new unit.

ARKANSAS

Building for State Board of Health.—The Arkansas State Board of Health is erecting a five story building in Little Rock at a cost of $150,000. The building is located on the west side of the state capitol grounds in accordance with the master plan of the state planning board for the beautification of the capitol grounds. The structure is fireproof, of reinforced concrete and faced with white limestone.

District Meeting.—The Fifth Councilor District meeting of the Arkansas Medical Society was held at the Garrett Hotel, El Dorado, recently, with the following speakers: Drs. Robert Lyle Motley, Memphis, Tenn., on "Diagnosis of Digestive Disturbances and Their Physiologic Explanation"; Raphael Eustace Semmes, Memphis, "Rupture of the Intervertebral Disk as the Common Cause of Low Back Pain and Sciatica," and Charles B. Huggins and William W. Scott, Chicago, "Studies on Prostatic Cancer."

CALIFORNIA

State Medical Meeting, May 4-7.—The California Medical Association will hold its annual meeting in Del Monte, May 4-7, under the presidency of Dr. Henry S. Rogers, Petaluma. Included among the out of state speakers will be Dr. Wallace H. Cole, Minneapolis, on "War Treatment of Fractures"; Robert Commons, A.B., Boston, and Dr. Arthur E. Guedel, Los Angeles, "Controlled Respiration"; Dr. Carl M. Peterson, Secretary, Council on Industrial Health, American Medical Association, Chicago, "Wartime Problems in Industrial Medicine," and Dr. Wallace M. Yater, Washington, D. C., "Diseases of the Heart Amenable to Surgical Treatment." Among California physicians participating in the program will be:

Dr. John Homer Woolsey, Woodland, Soft Tissue Wounds, Gas Gangrene and Tetanus.
Dr. Lowell A. Rantz, San Francisco, Sulfonamide Medication.
Dr. Alfred C. Reed, San Francisco, Nutritional Enteritis as a Deficiency Syndrome.
Dr. Clinton H. Thienes, Los Angeles, Present Status of Vitamin P.
Dr. Leonid S. Cherney, San Francisco, New Transverse Low Abdominal Incision.
Dr. Arthur J. Hunnicutt, Oakland, Fluid Imbalance in Surgery—A Four Point Plan of Attack.
Dr. James W. Ravenscroft, San Diego, Treatment of Incomplete and Inevitable Abortions.
Dr. Ervin H. Epstein, Oakland, Photosensitization in the Treatment of Psoriasis.
Dr. William T. Grant, Los Angeles, Clinical Diagnosis of Cerebellar Injuries.

A number of symposiums will be included on the program, among which will be one on military surgery with the following speakers: Drs. Cole, "Present Status of the Treatment of Poliomyelitis"; Frank S. Dolley, Los Angeles, "Chest Injuries in War"; Lewis A. Alesen, Los Angeles, "Traumatic Shock and Hemorrhage," and Don D. Weaver, Oakland, "Treatment of Burns." Representatives of the medical corps of the army and navy will be on the general program.

GEORGIA

The Fischer Awards.—The L. C. Fischer award of $100 for the best written paper presented before the Fulton County Medical Society showing the most original research went to Drs. Carter Smith, Henry Clifford Sauls and Charles F. Stone Jr. for their paper entitled "Subacute Bacterial Endocarditis Due to Streptococcus Viridans." A similar prize for research was won by Drs. Emmett D. Colvin, Rudolph A. Bartholomew and William H. Grimes Jr. on "Interpretation of Blood Pressure Behavior During Pregnancy and the Puerperium." All are from Atlanta.

Laboratory for Diseases of Eye.—The Eye Pathological Laboratory of Grady Hospital, Atlanta, was recently opened. The unit occupies space in the Gray Clinic of the hospital and will be available to all ophthalmologists. It is the gift of Mr. L. F. Montgomery, Atlanta, an alumnus of Emory University. Drs. F. Phinizy Calhoun Jr. and William T. Edwards Jr. are in charge of the laboratory. According to the *Bulletin* of the Fulton County Medical Society the laboratory is the only one of its type in the Southeast and is one of about nine of its kind in the country.

Railway Surgeons' Meeting.—The twenty-second annual meeting of the Surgical Association of Atlanta and West Point Railroad Company, the Western Railway of Alabama and Georgia Railroad was held at the Atlanta Biltmore Hotel, March 26. Major Dwight M. Kuhns, U. S. Army, Medical Corps, in charge of the fourth corps area laboratories, Fort McPherson, was the guest speaker on "Measures Being Taken to Protect Troops from Diseases and Infections Following Wounds." Other speakers were Drs. Harry L. Cheves, Union Point, "Traumatic Abdomen"; Lewis S. Patton, Athens, "Injuries of the External Eye and Uses of the Sulfonamides in Their Treatment"; Charlie N. Wasden, Macon, "Concussions of the Brain"; William Howard Hailey, Atlanta, "Dermatoses in Railroad Workers," and Wallace H. Clark, LaGrange, "Injuries to the Genito-Urinary Tract." Dr. Floyd W. McRae, Atlanta, gave the presidential address.

ILLINOIS

Graduate Conference in Belleville.—The Missouri and Illinois Post-Graduate Committees sponsored a joint clinical conference in Belleville, April 9. Included among the speakers were:

Dr. Cyrus E. Burford, St. Louis, Urology—Diagnosis and Significance of Hematuria.
Edmund U. Cowdry, Ph.D., St. Louis, Geriatrics.
Dr. Walter M. Whitaker, Quincy, Ill., The Role of Fluid Balance in Pediatrics.
Dr. Francis J. Braceland, Chicago, Psychiatry—Recognition of the Psychopathic State in the Selectee.
Dr. Harold M. Camp, Monmouth.
Col. Paul G. Armstrong, Springfield.

Tumor Diagnostic Service.—The state department of health has established the third state subsidized tumor diagnostic service at St. Anthony's Hospital in Rockford. Similar services were established at the Methodist Hospital of Central Illinois, Peoria, and at the Memorial Hospital in Springfield. Although the state division of cancer control directs the diagnostic service, the actual management will be the responsibility of the consulting hospitals, which are chosen by the local county medical society. The tumor diagnostic services are designed to provide for the general practitioner a competent consultation service without cost for his suspected cancer cases. No treatment is rendered in any case.

Chicago

Portrait of Dr. Anna Lapham.—Exercises were held on March 17 to dedicate a portrait of Dr. Anna Ross Lapham, assistant professor of obstetrics, Northwestern University Medical School. Dr. Lapham graduated at Northwestern University Woman's Medical School in 1898. She joined the staff of Northwestern University Medical School in 1919 as a demonstrator. In 1922 she became instructor and in 1926 assistant professor. Although she retired in 1929, her name is still included on the list of active instructors. Dr. Lapham was the first woman to reach the rank of assistant professor at the medical school.

Dr. De Lee's Will.—In the will of the late Dr. Joseph B. De Lee bequests provide for establishment of the Joseph Bolivar De Lee Endowment for Medical Education at Northwestern University Medical School and a foundation bearing his name for teaching and research of Northwestern University Medical School and its clinics. The first was provided for with annuity funds of $10,000 arranged for in 1923 to take effect on his death and the second fund of $100,000 was created in 1929.

Another $5,000 goes to the Chicago Maternity Center, which Dr. De Lee founded. The will further stipulates that if $25,000 remains after specific bequests, a fund to give an annual award for the greatest contribution to obstetrics is to be established in honor of Dr. De Lee's late brother, Solomon Theron De Lee.

KANSAS

New Executive Secretary.—Mr. Oliver Ebel, for five years chief probation officer of the Sedgwick County Juvenile Court, Wichita, has been appointed executive secretary of the Sedgwick County Medical Society. Mr. Ebel succeeds Mr. Jack F. Austin, Wichita, who recently went into army service.

MARYLAND

State Medical Meeting in Baltimore.—The Medical and Chirurgical Faculty of the State of Maryland will hold its one hundred and forty-fourth annual meeting in Baltimore, April 28-29, under the presidency of Dr. Robert Lee Hall, Pocomoke City. Dr. Cyrus C. Sturgis, Ann Arbor, Mich., will deliver one Trimble Lecture on "Syndromes Associated with Leukopenia," and Dr. John Homans, Boston, will give one on "Vasomotor and Other Reactions to Injuries and Venous Thrombosis." There will be a panel discussion on the health of the state as revealed through selective service and army examinations. On Wednesday a round table luncheon will feature a wide range of medical topics. Other speakers on the program will include:

Dr. Hall, Changes in the Practice of Medicine in the Counties of Maryland in the Last Forty Years.
Dr. Thomas B. Aycock, Baltimore, Causalgia.
Dr. Thomas Nelson Carey, Baltimore, Rocky Mountain Spotted Fever.
Dr. Nels A. Nelson, Baltimore, Syphilis in Industry.
Dr. Kenneth L. Pickrell, Baltimore, Local Treatment of Burns.
Dr. Edgar J. Poth, Baltimore, A New Intestinal Antiseptic—Succinyl Sulfathiazole.
Dr. Thomas P. Sprunt, Baltimore, Blood Plasma Proteins.
Dr. Caroline C. Bedell Thomas, Baltimore, Rheumatic Fever.
Dr. Isaac Ridgeway Trimble, Baltimore, Sympathectomy in Peripheral Vascular Diseases.
Dr. Henry F. Ulrich, Baltimore, Ununited Fractures.
Dr. Maxwell M. Wintrobe, Baltimore, Vitamin Deficiencies.
Col. Leon A. Fox, M. C., U. S. Army, chief health officer, Caribbean Division, The Doctor in War.

MASSACHUSETTS

Evans Memorial Lecture.—Dr. William Dock, professor of pathology, Cornell University Medical College, New York, delivered the Robert Dawson Evans Memorial Lecture in the Evans Memorial Auditorium, Boston, March 27. His subject was "Albuminuria and Associated Renal Changes."

New Secretary of State Board.—Dr. Harold Quimby Gallupe, Waltham, has been elected secretary of the Massachusetts Board of Registration in Medicine to succeed Dr. Stephen Rushmore, Boston, who resigned to become dean of Middlesex University School of Medicine, Waltham. Dr. Gallupe graduated at Harvard Medical School, Boston, in 1918.

Changes at Harvard Medical School.—John H. Mueller, Ph.D., associate professor of bacteriology and immunology, has been named professor of bacteriology and immunology at the Harvard Medical School, Boston, effective July 1. He will also take charge of the department at the medical school and at the school of public health. The following men were named to associate professorships: Dr. Fuller Albright, now assistant professor of medicine; Dr. Allan M. Butler, now assistant professor of pediatrics, and Dr. Hiram H. Merritt, now assistant professor of neurology. Dr. Frederick J. Stare, who graduated at the University of Chicago School of Medicine in 1941, has been appointed assistant professor of nutrition.

MICHIGAN

Change in Health Officers.—Dr. Sue Hurst Thompson, West Branch, has resigned as director of district health unit number 2 comprising the counties of Ogemaw, Oscoda, Iosco and Alcona. Dr. Harold W. Seff, West Branch, is the acting director, pending a permanent appointment in June.

The Hickey Lecture.—Dr. Eugene P. Pendergrass, professor of radiology, University of Pennsylvania School of Medicine, Philadelphia, delivered the sixth annual Hickey Memorial Lecture before the Wayne County Medical Society on April 6. His subject was the roentgen diagnosis of pneumonoconiosis and silicosis.

Personal.—Dr. Franklin H. Top has been appointed by the Detroit board of health as medical director of the Herman Kiefer Hospital, Detroit.——Dr. Carey P. McCord, Detroit, has been elected to extramural lectureship on occupational diseases at the new School of Public Health of the University of Michigan, Ann Arbor.

Society News.—Dr. Chevalier L. Jackson, Philadelphia, recently discussed "The Bronchoscope and Its Role in Modern Medicine" before the Wayne County Medical Society, Detroit. Dr. Richard H. Overholt, Brookline, Mass., also addressed the society recently on "A Common Masquerading Lung Disease."——Dr. Fred J. Hodges, Ann Arbor, recently addressed the Kalamazoo Academy of Medicine in Kalamazoo on "The Cyclotron as a Medical Instrument."——Dr. Vincent J. O'Conor, Chicago, addressed the Muskegon County Medical Society in Muskegon, March 20, on "Urologic Significance of Low Back Pain."——Dr. Samuel F. Marshall, Boston, discussed "Medical and Surgical Treatment of Gastric Lesions" before the Ingham County Medical Society in Lansing, March 17.

MISSOURI

Leo Loeb Receives Award.—The St. Louis Medical Society presented its award of merit and gold medal, March 3, to Dr. Leo Loeb, emeritus professor of pathology, Washington University School of Medicine. Dr. Loeb was born in Germany in 1869. From 1889 to 1896 he studied natural science and medicine at the universities of Heidelberg, Berlin, Zurich and Freiburg. He was assistant professor of experimental pathology at the University of Pennsylvania School of Medicine, Philadelphia, from 1904 to 1910, when he went to direct the department of pathology at the Barnard Skin and Cancer Hospital, St. Louis. In 1915 he became professor of comparative pathology at Washington, and in 1924 he became professor of pathology. He served as president of the Society of Cancer Research in 1911 and of the American Association of Pathologists and Bacteriologists, 1914-1915. From 1910 to 1912 he was chairman of the Section on Pathology and Physiology of the American Medical Association. Dr. Loeb's principal contributions through research have been on tissue and tumor growth. In acknowledging the award before the society, Dr. Loeb gave an address entitled "Medicine and the Community."

NEBRASKA

State Medical Meeting in Omaha.—The seventy-fourth annual meeting of the Nebraska State Medical Association will be held at the Hotel Fontenelle, Omaha, May 4-7, under the presidency of Dr. Dexter D. King, York. Guest speakers will include:

Dr. Henry W. F. Woltman, Rochester, Minn., Postoperative Neurologic Complications.
Dr. Marcus H. Hobart, Evanston, Ill., Treatment of Athletic Injuries.
Dr. Benjamin Goldberg, Chicago, The Present Day Tuberculosis Problem.
Dr. LeRoy H. Sloan, Chicago, Bedside Neurology for the General Practitioner.
Dr. Samuel J. Kopetzky, New York, Experiences in This War.
Dr. William T. Peyton, Minneapolis, Surgical Relief of Pain.
Dr. Rexford L. Diveley, Kansas City, Mo., Emergency Treatment of Fractures—How to Handle Various Types of Fractures Before They Are Reduced.
Dr. Wyman C. Corydon Cole, Detroit, Establishment of Respiration in the Newborn—Influence of Ether Anesthesia.
Dr. Willard O. Thompson, Chicago, Endocrine Problems in the Male.
Dr. Jacob P. Greenhill, Chicago, Soft Parts Dystocia.

A symposium on chemotherapy will be held on Tuesday afternoon with Nebraska physicians participating. On Tuesday evening a dinner session will be addressed by Mr. J. W. Holloway Jr., Director, Bureau of Legal Medicine and Legislation, American Medical Association, Chicago, on "Medical Licensure in Nebraska."

NEW YORK

Hospital News.—Jamaica Hospital, Jamaica, recently observed its fiftieth anniversary. One of the features of the celebration was the publication of a book entitled "The Jamaica Hospital, a History of the Institution," written by Dr. Francis G. Riley, Jamaica, for many years director of the department of urology.

Gastroenteritis Outbreak in Defense Community.—About one third of the population was affected in an outbreak of about 1,500 cases of gastroenteritis in February in a village in Delaware County. According to *Health News* the illness began suddenly and was characterized by vomiting and abdominal pain. There were no fatalities. A large number of the residents of this village and two neighboring communities are employees of the large manufacturing plant working on the defense program. Further study is being made to determine the exact origin of the outbreak.

Symposium on Dental Caries.—Three symposiums on dental caries were sponsored recently by the state medical and dental societies of the state department of health, cooperating with local organizations. The meetings were in Rochester on March 31, Binghamton on April 1 and Albany on April 2. The speakers were Dr. Julian D. Boyd, associate professor of

pediatrics, State University of Iowa College of Medicine, Iowa City; Philip Jay, D.D.S., assistant director for oral pathology, University of Michigan School of Dentistry, Ann Arbor, Mich., and Henry Trendley Dean, D.D.S., U. S. Public Health Service. The symposiums correlated the research which has been carried on recently in the following three channels: the effect of nutrition, the effect of bacteria in the mouth and the effect of the chemical content in drinking water.

New York City

Hugh H. Darby Joins Borden Company.—Hugh H. Darby, Ph.D., associate, department of biochemistry, of Columbia University College of Physicians and Surgeons, and known for his contributions in vitamin research, has joined the staff of the Borden Vitamin Company for research and development in the production and application of vitamins and hormones. Dr. Darby, a native of Scotland, received his Ph.D. at Columbia in 1928. He is identified as a discoverer of the existence of vitamin D in plant life and for his spectographic research on vitamins A, D and K.

Research Meeting.—The Research Society of the Long Island College of Medicine, Brooklyn, met at the college, April 8, for the following program: Dr. Victor Rudomanski, "Quantitative Study of Plasma and Extracellular Fluid Volume Changes in Some Instances of Dehydration"; Dr. Louis C. Johnson, "A Comparative Study of the Complement Fixation and Flocculation Tests in the Diagnosis of Syphilis," and George H. Paff, Ph.D., and Robert A. Lehman, Ph.D., "A Practical Technic and Design for the Assay of Digitalis on the Embryonic Chick Heart." The Long Island College of Medicine sponsored a symposium on psychosomatic medicine, March 26. The speakers included Drs. G. Canby Robinson, Baltimore, H. Russell Meyers, George Draper, Bela Mittelmann, George E. Daniels and Foster Kennedy.

NORTH CAROLINA

Health of Indians.—With a total Indian population in the state of 22,690, North Carolina reports an Indian birth rate of 40 per thousand and a death rate of 7.9. More than eight hundred Indian babies are born in the state each year. Indians share in all public health benefits in North Carolina on the same basis as other citizens. During one year 246 mothers visited the maternal and infancy clinics for antepartum advice. During the same year there were 47 infant visits to clinics. There were 123 Indians on the crippled children's register of the state board of health receiving orthopedic attention. Three field health workers follow up these cases and make home visits.

PENNSYLVANIA

Tuberculosis Society Observes Fiftieth Anniversary.—The Pennsylvania Tuberculosis Society will observe its fiftieth anniversary at a dinner meeting in the Bellevue-Stratford Hotel, Philadelphia, May 7, during the annual session of the National Tuberculosis Association, May 6-9. The Pennsylvania group claims to be the first voluntary tuberculosis society in the country, having been formed in 1892 as the Pennsylvania Society for the Prevention of Tuberculosis.

Immunization Project.—At a recent meeting of the board of trustees of the state medical society, Drs. Alexander Hamilton Stewart and John Moore Campbell Jr., Harrisburg, representing the state department of health, asked cooperation in a proposed comprehensive program of immunization of children over the age of 9 months against smallpox, diphtheria and tetanus. They stated that it was the wish of the department to have these immunizations performed by practicing physicians rather than in state clinics, with the department of health continuing to supply the vaccines and toxoids needed. The board of trustees of the state society endorsed the recommendation and urged active cooperation by the membership of the society.

Pittsburgh

Society News.—The Allegheny County Medical Society devoted its meeting, March 17, to a symposium on diseases of the genitourinary tract; the speakers were Drs. Edward J. McCague, James J. Lee, Joseph G. Moore and John L. Hamilton. The society devoted its February 17 meeting to a symposium on malignant lesions of the colon. The speakers were Drs. John D. Garvin, Leo P. Sheedy, John W. Stinson, Joseph W. McMeans and Kenneth M. Day.——Dr. Harold I. Lillie, Rochester, Minn., discussed "Vasomotor Rhinitis: Résumé of Labyrinthectomy Operation" before the Pittsburgh Otological Society on March 25.

SOUTH DAKOTA

State Medical Meeting in Sioux Falls.—The sixty-first annual session of the South Dakota State Medical Association will be held in Sioux Falls, May 13-15, under the presidency of Dr. Bertrand M. Hart, Onida. The tentative program lists the following speakers:

Dr. Edward L. Tuohy, Duluth, Minn., The Treatment of the Patient Over Fifty.
Dr. Hewitt B. Hannah, Minneapolis, Shock Treatment in Mental Disease: Insulin, Metrazol and Faradism.
Dr. Samuel E. Switzer, Minneapolis, Common and Obscure Skin Diseases.
Dr. Leo G. Rigler, Minneapolis, X-Ray Diagnosis.
Dr. Herbert Z. Giffin, Rochester, Discussion of Iron, Liver Extract and Vitamins in the Treatment of Various Types of Anemia.
Dr. Arnold Schwyzer, St. Paul, Abdominal Pain and Its Local Significance.

An interprofessional program will be held on Thursday afternoon in the form of a symposium covering the "Relationship of the Medical, Dental, Pharmaceutical, Nursing and Hospital Associations to the National Defense Program."

TEXAS

State Medical Association Meeting in Houston.—The seventy-sixth annual session of the State Medical Association of Texas will be held at the Rice Hotel, Houston, May 11-14, under the presidency of Dr. Neil D. Buie, Marlin. Out of state speakers will include:

Dr. Leonard G. Rowntree, colonel, U. S. Army, Washington, D. C., Medical Aspects of Selective Service.
Dr. Chester A. Stewart, New Orleans, The Feeding of Infants and Children.
Dr. Tom D. Spies, Cincinnati, Diagnosis of Deficiency Diseases.
Dr. Fred J. Hodges, Ann Arbor, Mich., The Responsibility of the Roentgenologist in Gastrointestinal Diagnosis.
Dr. Edwin C. Hamblen, Durham, N. C., Some Complications and Untoward Responses to Endocrine Therapy.
Dr. Elerious T. Bell, Minneapolis, Nephritis and Nephrosis.
Dr. Otto Jason Dixon, Kansas City, Mo., Ear Complication in Relation to General Practice.
Dr. Vilray P. Blair, St. Louis, Cancer of the Mouth.
Dr. John H. Musser, New Orleans, The Heart That Grows Old.
Dr. Louis A. Buie, Rochester, Minn., Important Facts Concerning the Diagnosis and Management of Lesions of the Terminal Colon.
Dr. Thomas L. Pool, Rochester, Lesions of the Bladder and Urethra Occurring in Women.
Dr. Edward N. Smith, Oklahoma City, The Treatment of Nausea and Vomiting of Pregnancy.
Dr. Arthur E. Hertzler, Halstead, Kan., The Principles of Abdominal Drainage.

Other societies meeting during the state session include the Texas Railway and Traumatic Surgical Association, Texas State Heart Association, Texas Association of Medical Anesthetists, Texas Chapter of the American College of Chest Physicians, the Conference of County and City Health Officers of Texas and the woman's auxiliary to the state medical association.

VIRGINIA

Graduate Course in Industrial Hygiene and Medicine.—A concentrated course for physicians who are going into the field of industrial medicine is now being conducted at the Medical College of Virginia, Richmond, in cooperation with the bureau of industrial hygiene of the state health department, the industrial commission of Virginia, the state department of education and the medical departments of several industrial industries in and around Richmond. Emphasis is placed on the actual practical experience with medical directors in industry.

WASHINGTON

Personal.—Dr. Robert S. Hamilton has been appointed health officer of Clallam County and the city of Port Angeles, succeeding Dr. Alfred E. Eyres who recently resigned to take additional work in public health.——Dr. Calvin L. Longstreth has been appointed health officer for Bellingham.

Society News.—The Spokane County Medical Society was addressed, April 9, by Drs. Hale A. Haven, Seattle, on "Neurosurgical Treatment of Angina Pectoris: Physiologic and Anatomic Factors with Clinical Results," and Joel W. Baker, Seattle, "Physiology and Surgery in Duodenal Ulcer."——The Spokane Surgical Society held an all day session on April 25 with Dr. Richard B. Cattell, Boston, as the guest speaker; at the banquet in the evening he discussed "Selection of Operation for Carcinoma of the Colon and Rectum."——At a meeting of the King County Medical Society in Seattle, March 16, the speakers were Drs. Goodrich C. Schauffler, Portland, Ore., on "The Female Genitalia in Childhood and Infancy," and Harold G. Trimble, Oakland, Calif., "Tuberculosis—The General Practitioner's Problem."

GENERAL

No Examination in Dermatology.—Because of an insufficient number of candidates, the American Board of Dermatology and Syphilology announces that no examination will be held in June at the time of the meeting of the American Medical Association. An examination will probably be held in the fall, notice of which will be published later.

Cancer Campaign Opens.—The American Society for the Control of Cancer, New York, launched its sixth annual educational campaign against cancer, April 1, under the slogan "Conquer Fear, Delay and Ignorance." The campaign aims to emphasize the fact that cancer is curable, to make known to every one the early symptoms by which its onset may be recognized and to point out that to effect a cure treatment must begin promptly after a diagnosis of cancer.

Prize Winners in Safety Contest.—Oklahoma was the national grand prize winner for states in the traffic safety contest sponsored by the National Safety Council, it was recently announced, and Memphis, Tenn., the winner for cities. Oklahoma won the award because of its record of placing first among all states in the southern division for five consecutive years and Memphis for overcoming the handicap of increased traffic on account of war industries and army movements with the reduction of fatalities by 56 per cent. Two other states and five other cities won first place awards in their divisions of the contest: Oregon in the western division, New Jersey in the eastern; Pittsburgh, Omaha, Manchester, N. H., Fond du Lac, Wis., and Aberdeen, S. D., are the five cities which also won first place awards in certain population groups.

Medical Library Meeting.—The Medical Library Association will hold its annual meeting in New Orleans, May 7-9, under the presidency of Miss Mary Louise Marshall, New Orleans. The scientific program will open with a symposium on tropical medicine presented by the following: Dr. George W. McCoy, New Orleans, "Tropical Medicine: Scope and Achievements"; Ernest Carroll Faust, Ph.D., New Orleans, "Amebiasis, a Tropical and Cosmopolitan Disease"; Dr. Mark F. Boyd, Tallahassee, Fla., "Malaria," and Dr. Guy H. Faget, Carville, "The Story of Leprosy in the United States." The annual dinner will be addressed by Dr. Rudolph Matas, professor of general and clinical surgery emeritus, Tulane University of Louisiana School of Medicine, New Orleans, on "Some Episodes in the Medical History of Louisiana." One session will be devoted to medicine in the Confederacy and another to general reference books of interest to the medical librarian.

Association of the History of Medicine.—The eighteenth annual session of the American Association of the History of Medicine will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., May 3-5. Dr. Jabez H. Elliott, Toronto, Ont., will deliver his presidential address at the dinner Monday evening on "Observation and Interpretation" and Dr. Hugh H. Young, Baltimore, will give an address in commemoration of the one hundredth anniversary of the first application of ether anesthesia, entitled "Crawford W. Long: The Pioneer in Ether Anesthesia." Among other speakers on the program will be:

Dr. Ernest E. Irons, Chicago, Théophile Bonet.
Dr. Benjamin Spector, Boston, Sir Charles Bell and the Bridgewater Treatises.
Dr. Theodore G. H. Drake, Toronto, The Medical Caricatures of Thomas Rowlandson.
Dr. Maurice S. Jacobs, Philadelphia, Thomas Beddoes and His Contribution to the Treatment of Tuberculosis.
George Urdang, D.Sc. Nat., Madison, Wis., The Mystery About the English Pharmacopeia (1618).

The William Osler Medal will be presented this year to John T. Barrett, A.B., of the Boston University School of Medicine. Dr. Francis R. Packard, Philadelphia, will deliver the Fielding H. Garrison Lecture Monday afternoon on "Medical Case Histories in a Colonial Hospital."

Medical Aid to China.—More than a million dollars will be required during the fiscal year ending April 1, 1943 to maintain and expand medical relief work in China, according to a budget estimate issued by the American Bureau for Medical Aid to China. In addition, United China Relief has been asked to allocate more than a million dollars in the current fiscal year for new projects including the establishment of nutritional, maternity and child health centers and a broad medical education program designed to provide skilled personnel needed in China. The largest outlay of funds will be to the Emergency Medical Service Training School program now being conducted under the direction of Dr. Robert K. S. Lim, Peiping. United China Relief states that the budget estimate does not include a proposed expenditure of $100,000 for a research program which will be carried out this year, if conditions permit, in cooperation with the Chinese Red Cross Medical Relief Corps, the Chinese National Health Administration and American specialists. This program would embrace among other things the study of the effect of sulfonamide drugs on important epidemic diseases.

Meeting of Association of American Physicians.—The fifty-seventh annual meeting of the Association of American Physicians will be held in Chalfonte-Haddon Hall, Atlantic City, N. J., May 5-6, under the presidency of Dr. James H. Means, Boston. Among the speakers will be:

Dr. Luther Emmett Holt Jr., Dr. Maxwell M. Wintrobe, Anthony A. Albanese, Ph.D., and Landrum B. Shettles, Ph.D., Baltimore, Experimental Amino Acid Deficiencies in Man.
Drs. Frederic M. McPhedran, Edwin L. Lame, Henry P. Close and Edwin S. Cooper, Philadelphia, The Mechanism of Healing of Tuberculosis Cavities.
Dr. Harold W. Jones, Dr. Leandro M. Tocantins, Dr. Lowell A. Erf and Ferdinand L. Munro, Ph.D., Philadelphia, Concentrated Blood Plasma, Intraxternally, in the Treatment of Shock.
Drs. Ralph A. Kinsella, Samuel Rabinovitch and Joseph J. Furlong, St. Louis, Hyposthenia.
Drs. Roy W. Scott and Curtis F. Garvin, Cleveland, Unusual Cardiac Mechanism Associated with Metastatic Cancer Involving the Left Auricle.
Drs. John E. Howard, Lawson Wilkins and Walter Fleischmann, Baltimore, The Metabolic and Growth Effects of Various Androgens in Sexually Immature Dwarfs.
Drs. Willard O. Thompson, Norris J. Heckel and Richard P. Morris, Chicago, Chorionic Gonadotropin: A Potent Stimulator of Growth.
Drs. Wintrobe, Mitchell H. Miller and Richard H. Follis Jr., Baltimore, What Is the Antineuritic Vitamin?

Mead Johnson Award Goes to Dr. Cowgill.—George R. Cowgill, Ph.D., associate professor of physiologic chemistry, Yale University School of Medicine, New Haven, Conn., was presented on April 1 with the $1,000 Mead Johnson and Company Prize by the American Institute of Nutrition for researches dealing with the B complex vitamins. According to the citation, Dr. Cowgill received the award "for his fundamental contributions through experimental research on the B vitamins, his leadership in interpreting results of research and his influence in promoting advances in this field of knowledge." The prize is given annually to the research worker in the United States or Canada who, in the opinion of judges representing the American Institute of Nutrition, has published the most meritorious work dealing with the field of B complex vitamins or who has made valuable contributions over an extended period of time. Dr. Cowgill was born in St. Paul in 1893. He received his Ph.D. at Yale in 1921. He was on the staff of Stanford University from 1916 to 1917 and went to Yale University Medical School in 1920. He has been associate professor since 1931. Dr. Cowgill is a member of the Council on Foods and Nutrition of the American Medical Association and of the vitamin advisory committee of the U. S. Pharmacopeia. He has served as editor of the *Journal of Nutrition* since 1939.

Psychiatric Meeting.—The ninety-eighth annual meeting of the American Psychiatric Association will be held at the Hotel Statler, Boston, May 18-21, under the presidency of Dr. James K. Hall, Richmond, Va. There will be sessions devoted to morale and military psychiatry, psychiatry and the U. S. Navy, geriatrics, psychosomatic medicine and schizophrenia. Among the speakers will be:

Dr. Miguel Onorio de Almeida, director, Laboratory of Physiology, Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, Experimental Epilepsy of the Frog.
Dr. Joseph C. Michael, Minneapolis, Multiple Murders Without Comprehensible Motivation.
Dr. Nathaniel Berkwitz, Minneapolis, Electric Subconvulsive Shock Therapy of Psychoses Associated with Alcoholism, Drug Addiction and Syphilis.
Drs. Herbert S. Ripley Jr., Charles A. Bohnengel and Ade T. Milhorat, New York, Personality Factors in Muscle Disease.
Dr. Simon Stone, Manchester, N. H., Nonspecific Therapy of Neurosyphilis.
Drs. Earl D. Bond and Thurston D. Rivers, Philadelphia, Follow-Up Studies in Insulin Shock.
Dr. Edward F. Reaser, Huntington, W. Va., Treatment of Catatonic Stupor with Amyl Nitrite and Physiotherapy.
Drs. Oskar Diethelm and Fred V. Rockwell, New York, A Study of the Psychopathology of Aging.
Drs. Herman I. Wortis and William S. Maurer, New York, "Sham Rage" in Man.
Dr. William A. Horsley Gantt, Baltimore, Measures of Susceptibility to Nervous Breakdown.
Dr. Juliette Louise Despert, New York, Psychopathology of Stuttering.

On Monday evening a public meeting will be addressed by Leonard T. Carmichael, Ph.D., president of Tufts College, Medford, Mass., on "The Contributions of Scientific Psychology to the National War Efforts" and Dr. Arthur H. Ruggles, Providence, R. I., "Psychiatric Problems in a Changing World." Tuesday evening there will be a series of round table discussions on alcohol, applications of psychoanalysis to the national emergency, civilian mental health and morale, a special report on experimental data on the unconscious, and military psychiatry.

Statement by New York Psychoanalytic Society and Institute.—This organization has published a statement in which are given the principles governing psychoanalytic education in the New York Psychoanalytic Institute and also the nature of the violations of these principles which in recent years have caused disagreement among workers in the institute. These educational principles are as follows:

1. A preparatory personal analysis is the first essential step in the training of every student, since a psychoanalyst must have a clear understanding of his own emotional make-up in order not to confuse his own personality with his therapeutic efforts. In the preparatory analysis the relationship of the student in training to his analyst is the same as that of a patient to a psychoanalyst. It is doubly necessary, therefore, that the preparatory analysis should be conducted in an atmosphere of quiet scientific objectivity, without injecting the student into the midst of any heated controversy, and certainly without enlisting the student as an ally in any dispute.

2. Once the student is allowed to undertake the analysis of patients, he is encouraged to conduct these analyses under the supervision of instructors who represent varying theoretical and technical points of view.

3. Intermediate and advanced students must have and are given an opportunity to attend seminars for the presentation and discussion of all points of view. It is an injustice to students to allow them to come under the exclusive influence of any single attitude.

4. New theories and clinical findings should first be presented not to elementary students but at scientific meetings of the society, where they can be critically evaluated; and modifications in technic should first be tried out only by those who are already mature in experience.

In recent years, the statement says, the educational committee of the society and institute came to realize that the basic principles referred to were being violated and that the training of certain groups of students was not meeting the requirements of the institute. It is pointed out in the statement (1) that increasing confusion was revealed among elementary students, together with an unscientific tendency to form groups around the persons of individual instructors and to reject the ideas of others with scant hearing; (2) a survey of the distribution of students disclosed that the scope of training was being circumscribed in the case of some students, who remained almost entirely under a single theoretical point of view through each successive stage of their instruction; (3) that in certain instances the relationship of teacher and student was being used as an opportunity to gather together a band of disciples under the pretext of "academic freedom"; (4) students were in some instances encouraged to make radical technical departures from established procedures which they had not yet mastered.

Direct action on these problems was avoided over a period of years in an effort to settle the controversy by the gradual process of scientific education, but these efforts were frustrated. It finally became the duty of the institute to correct the situation, and in April 1941 the educational committee recommended that "Dr. Horney's teaching be limited to lecturing." This recommendation was submitted to the floor of the society and was passed "by an overwhelming majority." The instructor resigned and this was followed by the resignation of four adherents and by the withdrawal of fourteen students. At that time there were eighty-eight members of the New York Psychoanalytic Society and Institute and one hundred and ten students.

The group which withdrew has organized a society under the name of "The Association for the Advancement of Psychoanalysis" and a training institute, which it calls the "American Institute for Psychoanalysis." Since the name of the new group may be a source of confusion to the outside world, and since it takes exception to the "unfounded allegations" which have been advanced as the occasion for these steps and because many questions have been addressed to the society indicating that this situation affects the public interest, the New York Psychoanalytic Society resolved to issue a statement.

The statement points out that for many years the institute carried on its educational activities in an informal fashion, but when the student body grew to more than a hundred the casual arrangements no longer functioned smoothly. A review was made of the records of the student body, and a reorganization of the curriculum was undertaken, based on the students' replies to questionnaires and a study of methods used in other psychoanalytic institutes. The curriculum was divided into a minimum of three years of work and the courses which had been informally considered as essential became formal requirements, additional required courses and electives were provided, and many new instructors were given an opportunity to teach. A few members of the teaching staff whose methods and theories differed from those of the majority immediately voiced their fear that the reorganization would be used as an opportunity to exclude them from teaching. The dissident group continued to claim that it was the object of unfair discrimination, and these charges after being examined repeatedly by different members and by appropriate committees were finally brought to the floor of the society.

The New York Psychoanalytic Society and Institute is said to be the only organization for training in psychoanalysis chartered by the University of the State of New York and the only institute in New York State recognized for such training by the American Psychoanalytical Association.

FOREIGN

Public Health Under Hitler's Rule.—Typhus has been reported in North Norway, and compulsory vaccination has been ordered in districts liable to infection. According to the *Svenska Dagbladet*, 10,000 people have been vaccinated against typhus and smallpox. The district commissioner of Riga has forbidden all public gatherings in order to prevent the spread of typhus, according to the Stockholm *Tidningen*, February 17. Lice are spreading among the school children according to the *Faedrelandet*, Copenhagen, February 22, and six classes in one school were to have been closed until the children had been deloused. The home secretary has decided, according to the *Berlingske Tidende*, Copenhagen, to introduce legislation providing for compulsory delousing. Typhus has entered central Europe as a result of the Russo-German war, and, according to the *Aftonbladet*, Stockholm, February 24, has entered Denmark from her warring neighbor. The German minister of health, who visited Copenhagen in January to lecture about public health, said that a line had been drawn in the east "over which the lice could not advance," but it is presumed that the lice reached Germany before this line was established. A medical officer at Malmoe believes that the danger of typhus infection in Sweden via Denmark is negligible owing to the reduction in traffic. The appearance of typhus at such Jutland towns as Aarhus, Randers and Aalborg is considered to be due to the large German garrisons there, which are periodically relieved. The Aalborg public health committee has asked the home office, according to *Boersen*, Copenhagen, February 14, to authorize the compulsory delousing of infested persons and also for compensation for damage caused to property by the delousing process. There is said to be real danger of typhus in Aalborg.

According to Lyons *National*, February 19, official communiqué number 86 stated that the German authorities were contemplating the repatriation of prisoners who were students in medicine, pharmacy and dental surgery. Those in these categories must obtain certificates that they were bona fide students before the armistice from the faculty of medicine concerned and must be of lower rank than surgeon sublieutenant. Application for certificates should be made to the Secretariat of State for War, Medical Corps Section, Royat, for the non-occupied zone, and to the Secretariat des Services de la Santé, 28 Avenue Frieland, Paris, for the occupied zone. Students of chemistry and physics were not included in the category. Relatives were reminded that the Germans were only considering the repatriation of these prisoners, but it would be as well to comply with the formalities required straightaway.

Aftonbladet, Stockholm, February 24, reports from Berlin that compulsory service has been introduced in the Ostland for doctors and nurses. Refusals to obey this order are punishable with imprisonment or fines.

CORRECTIONS

Sulfathiazole and Prophylene Glycol.—In a communication to the editor entitled "Propylene Glycol a Menstruum for Sodium Sulfathiazole" in THE JOURNAL, April 11, page 1317, the word "sodium" in the title should have been omitted. Dr. Fredrick F. Yonkman, who with others signed the letter, writes that he hopes that no attempts may be made to dissolve sodium sulfathiazole instead of sulfathiazole in propylene glycol.

Dr. Luckhardt Not Chairman of Physiology Department.—A news item in THE JOURNAL, March 14, page 907, referred to Dr. Arno B. Luckhardt as professor and chairman of the department of physiology, University of Chicago, The School of Medicine. Dr. Luckhardt is professor of physiology and not chairman of the department. He is, however, chairman of the administrative committee of the department of physiology.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 7, 1942.

Physicians Who Became Distinguished Politicians

The Right Honorable Sir Earle Page, minister representing the government of Australia in London, was a surgeon before he became an Australian statesman. In the presence of a distinguished audience, which included visitors from Australia and Canada, he was admitted to the honorary fellowship of the Royal College of Surgeons of England. At the ceremony the president of the college, Sir Alfred Webb-Johnson, said that the council decided to confer this distinction partly because of Page's services to surgery and partly because of the honor he had brought to the profession by his services as a statesman. From the time of Aristotle the hazardous path of politics had attracted many physicians. Several had achieved distinction, for, as sound treatment can be planned only after correct diagnosis, so can sound policy be formulated only in the light of knowledge of the facts. In the British Empire we may be proud of the record of many physicians who have followed a political career. Walter Foster, Christopher Addison, Auckland Geddes and Walter Elliot have held high ministerial office at home. Charles Tupper was prime minister of Canada, and Starr Jameson in South Africa. Godfrey Huggins is prime minister in Southern Rhodesia. In France that sturdy patriot Clemenceau, who today again might have "fired the soul of France," was a medical man, but so was Marat and so was the advocate of the humane killer, Dr. Guillotin.

Addressing Sir Earle Page, the president said "We recall that in the last war you gave splendid service in a busy casualty clearing station. In this war you are one of a team charged with the extirpation of the most dreadful scourge that has ever beset mankind, and for that scourge will be required the most radical excisional operation ever performed. For such a task it is fitting that you should be armed with what is regarded as the highest surgical diploma obtainable."

Replying, Sir Earle Page said that surgical training was most valuable for political life. "The most needed and least common thing in politics is diagnosis before treatment. Too often political treatment is empirical. A huge poultice is clapped on the cancer to hide it from the public instead of doing a complete excision."

The Empire Rheumatism Council

The fifth annual report of the Empire Rheumatism Council states that, though the war has delayed, it has not thwarted its plans. The large measure of attention it has won for a long neglected problem of public health and, in particular, the good progress last year is reason for reassurance. The publication early this year of "Rheumatism—A Plan for National Action" brought a notable awakening of public interest in the serious lack of facilities for effective treatment of rheumatic disease. The task is still to be faced of persuading the community, working through the appropriate authorities, to take action. Several favorable facts in regard to the provision of effective means of treatment are to be recorded. The Carnegie Dumferline Trust has approved of action taken in that town, and a bequest has been received toward the cost of a hospital or clinic in Aberdeen. The treatment centers in the United Kingdom continue their work, and the demand on their services shows how much they are valued. But the position still remains that only a small proportion of sufferers can obtain in the early stages the right diagnosis and the right treatment, which would save a great proportion from becoming disabled.

The Good Health of London

The report for 1940 of Dr. W. Allen Daley, medical officer and school medical officer for London, shows that in spite of the war the health of London has been good. The vast public health department continued not only to provide care and attention for the sick who applied to its hospitals but also carried on all its activities for the prevention of disease. No case of smallpox was notified during the year, and there has been none since June 1934. There was no epidemic of infectious disease. The number of cases of typhoid was only 3 per week. But the number of cases of cerebrospinal fever was increased in comparison with the previous year, 151 deaths against 34. The 1940 maternal mortality was 1.98 per thousand live births. The deaths from tuberculosis showed little variation from 1939, 3,005 against 2,952. However, the incidence in 1940 was greater than the figures indicate, because there has been a wartime reduction in the population of London in consequence of evacuation. The casualties from air raids did not reach the number anticipated, for which hospital preparation had been made.

CHILDREN STOOD THE AIR RAIDS WELL

The number of children of school age still in London at the beginning of 1940 was 180,000; at the end of the year, 85,000. All children about to leave school were examined so that their parents might be advised of any medical reason why certain employments would be unsuitable, and this is the first report to give information on the contraindications. Of 7,395 boys about to leave, 90 per cent were fit for any occupation; of 7,751 girls, 89 per cent. The biggest groups of contraindications were in work involving eyestrain (boys 4.44 per cent, girls 5.29) and in work requiring acute distant vision (boys 4.49 per cent, girls 4.98).

Thinner Books

The war has produced a great reduction in the supply of paper. Much of the raw material for making paper is imported, and shipping space is required for the more important munitions. Paper is rationed and medical journals have had their supplies reduced to half that of their prewar use. A book production war economy agreement has been voluntarily adopted by the publishers to cooperate in the economic use of materials. It is held to be a far better method than the imposing of restrictions by the government, which might be ill conceived and not based on correct knowledge of technical details. Never before in the history of books has it been necessary to regulate the format. It has been suggested that books should be standardized, but there is so much individuality in their making that this would be detrimental. Publishers have to work on a basic ration of paper. The result of the agreement is that books will be thinner and must conform to the typographic standards laid down and to the maximum paper specification. The public is asked to realize that, although the books are thin, they contain just as much reading matter and are just as costly to produce.

Status of Women Physicians in the Air Force

Under a new order from the Air Ministry, women medical and dental officers in the Women's Auxiliary Air Force are authorized to attend men as well as women. Previously their duties were confined to members of the Women's Auxiliary Air Force and they were employed only at the receiving and training centers of the force. The order also grants women equal status in seniority and rank as professional men in the air force. Most of the doctors and dentists of the Women's Auxiliary Air Force will be posted to stations where both men and women are employed, and for the first time women will have the opportunity of becoming station senior medical officers. Until now a distinction has been made between the duties of men and of women holding similar appointments.

PALESTINE

(From Our Regular Correspondent)

Feb. 28, 1942.

In Wartime

The war taught us economy. We can take as an example Kupat Holim, the workmen's sick fund of the General Federation of Jewish Labor in Palestine, an institution tendering medical aid to nearly 40 per cent of the Jewish population in the country, some two hundred thousand people. Although Kupat Holim put in stocks of medicaments sufficient for the needs of its members for one or two years, the directors were compelled to take strong measures for enforcing the maximum possible economy in the use of medical supplies. Detailed instructions were given for the use of medicaments and x-ray films. All three hundred and fifty physicians employed by Kupat Holim were placed under close supervision of a central control department. The medical staff appreciated the seriousness of the hour and saw that any excessive use of a vital medicine may in the future revenge itself both on the patient and on the physician, as supplies may be entirely exhausted. When prescribing a medicine or treatment, the physician has to take into account conditions two years hence. In this manner we have attained a standard where for each hundred visits only seventy-five prescriptions are written out by Kupat Holim physicians. The same applies to injections. The quantity of x-ray films dispensed monthly to the various x-ray institutes, whether in hospitals or in dispensaries, is calculated by the square centimeter of film. The economy in films was attained not so much by the reduction of diagnostic activities as through using fluoroscopy instead of photographs. An x-ray examination of the lungs, for instance, is carried out as follows: First a fluoroscopy is made, and if a suggestive shadow is discerned in any apex a small photograph is made of that apex. The use of tomographic photographs of the lungs has been confined to serious indications.

The question of insulin is serious. We have been compelled of late to forego the considerable advantages of protamine zinc insulin and revert again to plain insulin. An index of all members of Kupat Holim suffering from diabetes was compiled, with an indication of the number of units required by each patient. The supervising department was thus able to estimate the quantity of insulin required for the next two years and prepare sufficient stocks. It was sometimes necessary to order the insulin by air mail, so that it may be received fresh. The use of insulin for purposes other than diabetes was entirely dispensed with. Similar arrangements were made in connection with the use of liver preparations and serums.

Nurses and attendants were advised to economize. When the price of a thermometer goes up in the open market from 20 cents to $2.50, strict economy is called for. It is easy to understand the anxiety with which one handles today the x-ray tube, the burner of the quartz lamp and similar apparatus. We have thus reached a stage where after two and a half years of war we are still in possession of sufficient stocks of most of the important medical supplies and instruments to cover our requirements for a lengthy period. There is, however, grave anxiety with regard to some products, especially after America's entry into the war.

The foregoing applies in the main to the institutions of Kupat Holim and the Hadassah Medical Organization. The rest of the population is in a much more difficult position.

PARTICIPATION IN THE WAR EFFORT

Contrary to the miserable condition in which the population of this country found itself in the last war, the present world conflagration found Palestine partly prepared, owing to the numerous medical institutions erected, such as the Hadassah Medical Organization, Kupat Holim, the Workmen's Sick Fund of the General Federation of Jewish Labor in Palestine, Magen David Adom, a first aid society, and municipal hospitals and dispensaries in Tel-Aviv, Haifa and Tiberias. Another happy factor was the numerous physicians who, during the cruel rule of the ruthless totalitarian régime in Europe, gathered here from the various European countries and found in Palestine a haven of peace. When the Jewish national institutions announced a general mobilization, the doctor and the nurse were the first to answer the call, their number attaining many hundreds. Many of these physicians left regular positions in medical institutions; eight from among the Kupat Holim doctors enlisted and their posts are being kept for them. All in all, eighty-five Jewish physicians have joined up and an additional number, three to five times as large, is still waiting to be called up. There are large reserves which could still be utilized.

The Jewish population has long since completed its first draft of ten thousand men and is now in the course of enlisting the second ten thousand soldiers, together with whom many physicians and nurses are ready and prepared to go wherever they are sent, to the desert, Russia, England and even the Far East. Recently the Women's Palestine Auxiliary Territorial Service was formed, and the required number of women as well as women physicians to serve with such units has already enlisted.

THE HADASSAH MEDICAL ORGANIZATION

A few months before the outbreak of war, Hadassah's long cherished ambition was realized, and the Hadassah University Medical Center in Jerusalem was opened. The center, which has the threefold aim of healing, teaching and research, is composed of the Rothschild Hadassah University Hospital, the Henrietta Szold Hadassah School of Nursing and the Nathan Ratnoff Building, which houses the medical school for postgraduate study and research of the Hebrew University. Within its spacious new quarters, equipped with the most up to date facilities, the hospital's services have been expanded and the standard of treatment raised to a high level. The hospital has over three hundred beds and can be enlarged to accommodate five hundred. Attached to it are x-ray, radium and pathologic institutes, bacteriologic, serologic, chemical and metabolism laboratories, an outpatient department and a hospital social service. To be in readiness for emergencies, the Rothschild Hadassah University Hospital has prepared two hundred reserve beds, and, with Hadassah's aid, the hospitals founded by it and now maintained by the local authorities in Tel-Aviv, Haifa and Tiberias were able to increase their hospitalization facilities for this purpose. In addition, a number of emergency hospitals were opened and equipped with Hadassah's assistance in various parts of the country. To alleviate the consequences of economic depression, free hospitalization for destitute patients from all parts of the country is provided in the Rothschild Hadassah University Hospital, a district medical service has been established in rural localities and a home medical service in towns, and the hospital social service was introduced in new localities.

Marriages

ARTHUR ALEXANDER KNAPP, Virginia Beach, Va., to Miss Florence Beverly Greene at Elizabeth City, N. C., February 3.

GEORGE G. GARRETT, Shreveport, La., to Miss Una Mary Andries at Grove Hill, Ala., March 1.

MURLIN NESTER, Maryville, Tenn., to Miss Mary Ellen Fife of Knoxville, January 22.

DANIEL EDWARD BOWERS, Peoria, Ill., to Miss Virginia Rusk of Tremont recently.

DAVID H. LAWRENCE JR. to Miss Nelda Markert, both of Denver, January 17.

Deaths

James Joseph Walsh ● New York; University of Pennsylvania Department of Medicine, Philadelphia, 1895; an Affiliate Fellow of the American Medical Association; formerly dean and professor of nervous diseases and the history of medicine at the Fordham University School of Medicine; consulting physician, Sanatorium Gabriels, Gabriels, N. Y.; author of "Makers of Modern Medicine," "The Thirteenth Greatest of Centuries" (tenth edition published in 1937), "History of Medicine in New York" (published in five volumes), "Medieval Medicine," "Religion and Health" and many others; aged 76; died, February 28, of arteriosclerosis.

Charles Schultze Sample Jr., Passed Assistant Surgeon, United States Public Health Service, Mobile, Ala.; Washington University School of Medicine, St. Louis, 1932; entered the United States Public Health Service as an assistant surgeon Oct. 18, 1934; on the staff of the U. S. Marine Hospital; aged 37; died, March 8, in the U. S. Marine Hospital, Baltimore, of lobar pneumonia following an operation for the removal of a tumor.

Joseph R. Numbers Sr., Boise, Idaho; Eclectic Medical Institute, Cincinnati, 1885; member, past president and secretary of the Idaho State Medical Association; formerly member of the state examining board; fellow of the American College of Surgeons; at one time mayor of Weiser; on the staff of St. Alphonsus Hospital; aged 77; died, February 17.

Charles Knauss Reinke, Jamestown, N. D.; University of Pennsylvania School of Medicine, Philadelphia, 1917; member of the American Psychiatric Association and the New England Society of Psychiatry; served during World War I; aged 50; died, March 12, in the Hospital of the University of Pennsylvania, Philadelphia, of acute yellow atrophy of the liver.

Joseph Oswald Marien, Lewiston, Maine; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1924; member of the Maine Medical Association; at one time assistant superintendent of the Western Maine Sanatorium, Greenwood Mountain; on the staff of St. Mary's Hospital; aged 47; died, March 6, of glioma of the brain.

William Winn Hartwell, Malden, Mass.; Harvard Medical School, Boston, 1900; member of the Massachusetts Medical Society; served as city physician in Malden for several years and as medical examiner of the city board of health; on the staff of the Malden Hospital; aged 67; died, March 2, of coronary thrombosis.

William Benedict Evans ● Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1912; fellow of the American College of Surgeons; served during World War I; aged 56; on the staff of the Fitzgerald Mercy Hospital, Darby, and the Chester Hospital, where he died, February 15.

John Hughes Galbraith ● Altoona, Pa.; University of Pittsburgh School of Medicine, 1912; fellow of the American College of Surgeons; served during World War I; orthopedic surgeon, Altoona General and Mercy hospitals; orthopedic consultant, Philipsburg State Hospital; aged 55; died, January 28.

William Napoleon Lynn ● Knoxville, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1909; served during World War I; aged 58; on the staffs of the Fort Sanders Hospital, Knoxville General Hospital and St. Mary's Memorial Hospital, where he died, February 2.

Carl Goldmark ● New York; Columbia University College of Physicians and Surgeons, New York, 1896; on the staff of the Lebanon Hospital; consulting physician to the Will Rogers Memorial Hospital, Saranac Lake, N. Y.; aged 66; died, February 19, of hypertension and cerebral hemorrhage.

Frederick Alexander Logan, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1920; served during World War I; formerly assistant medical superintendent of the Toronto General Hospital; aged 47; died, February 7, in Niagara Falls of coronary occlusion.

Justin Herold, Scarsdale, N. Y.; Bellevue Hospital Medical College, New York, 1882; formerly professor of medical jurisprudence at the Fordham University School of Medicine, New York; for many years coroner's physician of New York County; aged 81; died, February 3.

H. Maxey Swift, Mount Vernon, Ill.; Physio-Medical College of Indiana, Indianapolis, 1895; member of the Illinois State Medical Society; formerly mayor and member of the state legislature; aged 71; died, February 15, of injuries received in an automobile accident.

John Calvin Hubenthal, Belmont, Wis.; Rush Medical College, Chicago, 1896; member of the State Medical Society of Wisconsin; past president of the Lafayette County Medical Society; formerly member of the county board of education; aged 73; died, January 18.

Charles Percy Charlton, Palmyra, Neb.; Chicago College of Medicine and Surgery, 1913; member of the Nebraska State Medical Association; served during World War I; associate staff member, Bryan Memorial Hospital, Lincoln; aged 55; died, February 18.

Alexander Carleton Potter ● Cambridge, Mass.; Harvard Medical School, Boston, 1899; served during World War I; president of the New England Society of Physical Medicine; aged 68; died, January 28, in the Massachusetts General Hospital, Boston.

Romeo Joseph Morin, Lewiston, Maine; Laval University Faculty of Medicine, Quebec, Que., Canada, 1916; member of the Maine Medical Association; served during World War I; on the staff of St. Mary's General Hospital; aged 50; died, February 3.

James Roberts Nankivell, Athens, Tenn.; University of the City of New York Medical Department, 1878; member of the Tennessee State Medical Association; served during World War I; aged 87; died, February 6, in the Foree Hospital of pneumonia.

William Emmett Wishart, Charlotte, N. C.; North Carolina Medical College, Charlotte, 1911; member of the Medical Society of the State of North Carolina; served during World War I; aged 55; died, March 2, of cerebral hemorrhage.

John Albert Martin, Indianapolis; Medical College of Indiana, Indianapolis, 1894; veteran of the Spanish-American War and World War I; aged 72; on the staff of the Methodist Hospital, where he died, February 19.

Herbert Jerome Matthews, Elliott, S. C.; Medical College of the State of South Carolina, Charleston, 1907; member of the South Carolina Medical Association; aged 57; died, February 17, in the Tuomey Hospital, Sumter.

George Tillerie Ross, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1880; member of the American Laryngological, Rhinological and Otological Society; aged 91; died, January 25.

Frank J. Chalaron ● New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1892; veteran of the Spanish-American War; on the staff of the Mercy Hospital; aged 72; died in January.

Ernst Freund, Boston; Deutsche Universität Medizinische Fakultät, Prague, Austria, 1900; member of the Massachusetts Medical Society; author of a book entitled "Diseases of the Joints"; aged 65; died, February 19.

James Benjamin Wallace, Providence, Ky.; Hospital College of Medicine, Louisville, 1905; member of the Kentucky State Medical Association; member of the county board of health; aged 75; died, January 31.

James Eldred Miller ● Huntsville, Ala.; Memphis (Tenn.) Hospital Medical College, 1911; past president of the Madison County Medical Society; on the staff of the Huntsville Hospital; aged 59; died, February 27.

Leonard Dominic Marinaro, Sharon, Pa.; Georgetown University School of Medicine, Washington, D. C., 1926; member of the Medical Society of the State of Pennsylvania; aged 42; died, February 10.

Isaiah Snyder Morris, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; served during World War I; aged 77; died, February 15, in the Mount Carmel Mercy Hospital.

George Lawrence Nicholas, New City, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; also a clergyman; aged 77; died, died, February 17.

James E. Nelson, Lodi, Calif.; University of Missouri School of Medicine, Columbia, 1905; member of the California Medical Association; aged 62; died, January 5, in a hospital at Merced.

William Gillmore Booth, Seattle; Baltimore Medical College, 1898; member of the Washington State Medical Association; aged 81; died, February 6, of chronic myocarditis and pneumonia.

Joseph William Allen, Goodman, Miss.; Memphis (Tenn.) Hospital Medical College, 1894; Marion-Sims College of Medicine, St. Louis, 1896; aged 71; died, February 4, in Jackson.

Armistead Montgomery Fredlock, Elkins, W. Va.; University of Maryland School of Medicine, Baltimore, 1889; for many years mayor; health officer; aged 75; died, February 15.

Willard Anthony Thompson ● Dixon, Ill.; Hahnemann Medical College and Hospital, Chicago, 1910; served during World War I; aged 59; died, March 1, of coronary thrombosis.

Walter Scott Lucas, Ventnor, N. J.; Jefferson Medical College of Philadelphia, 1910; member of the Medical Society of the State of Pennsylvania; aged 69; died, February 12.

Guy Leslie Herman, Socorro, N. M.; University of Tennessee College of Medicine, Memphis, 1912; member of the New Mexico Medical Society; aged 54; died, January 25.

William Wilmerding Moir ● Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1906; aged 60; died, February 3, of a self-inflicted bullet wound.

Edward F. Hanlon, Hazleton, Pa.; Jefferson Medical College of Philadelphia, 1908; member of the Medical Society of the State of Pennsylvania; aged 69; died, February 23.

Martin Joseph Larkin, Philadelphia; Eclectic Medical College, Cincinnati, 1913; member of the Medical Society of the State of Pennsylvania; aged 70; died, February 9.

Goodall Harrison Wooten, Austin, Texas; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; aged 72; died, January 30.

Thomas Andrew McGrath, Hoosick Falls, N. Y.; Albany Medical College, 1909; served during World War I; formerly county coroner; aged 54; died, February 10.

Robert A. Pogue, Covington, Va.; Meharry Medical College, Nashville, Tenn., 1918; aged 56; died, January 10, in the Chesapeake and Ohio Hospital, Clifton Forge.

Abe Bethel Penn, Alexandria, Va.; Howard University College of Medicine, Washington, D. C., 1902; aged 64; died, January 15, at his home in Washington, D. C.

John Medicus Cullum, Nashville, Tenn.; University of Nashville Medical Department, 1905; formerly member of the board of education; aged 71; died, February 17.

Marion U. Thomas, Weeping Water, Neb.; University Medical College of Kansas City, Mo., 1897; aged 76; died in February at Lincoln of coronary thrombosis.

Albert Schupmann, Chicago; Homeopathic Medical College of Missouri, St. Louis, 1897; member of the Illinois State Medical Society; aged 79; died, January 25.

Cary S. McCafferty, Columbus, Ohio; Columbus Medical College, 1890; member of the Ohio State Medical Association; aged 73; died, February 7, of heart disease.

Samuel Edward Lynch, Olyphant, Pa.; Jefferson Medical College of Philadelphia, 1887; formerly superintendent of the Blakely Home; aged 80; died, January 25.

Frank S. Hargrave, Orange, N. J.; Leonard Medical School, Raleigh, N. C., 1901; for many years member of the state legislature; aged 68; died, March 11.

Ettore Tresca ● New York; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1892; aged 74; died, January 15, in the Park West Hospital.

W. Johnson Strother, Culpeper, Va.; Medical College of Virginia, Richmond, 1871; member of the Medical Society of Virginia; aged 92; died, February 15.

George Mathes, Kiel, Wis.; Chicago Homeopathic Medical College, 1904; for many years health officer; aged 69; died, February 19, of miliary tuberculosis.

Jesse A. Clifton, Beaufort, S. C.; Medical College of the State of South Carolina, Charleston, 1896; aged 68; died, January 6, in a hospital at Walterboro.

Leslie Bryce Stockslager, Lewiston, Idaho; Barnes Medical College, St. Louis, 1908; aged 57; died, February 17, in Clarkston, Wash., of heart disease.

Charles Francis McNevin ● St. Paul; Northwestern University Medical School, Chicago, 1908; aged 64; died, February 16, in St. Joseph's Hospital.

Cranz Nichols ● Maxwell, Texas; University of Texas School of Medicine, Galveston, 1913; served during World War I; aged 53; died, January 6.

Ralph Waldo Emerson Bledsoe, Los Angeles; Meharry Medical College, Nashville, Tenn., 1915; served during World War I; aged 46; died, January 25.

Walter Raleigh Breeding, Marysville, Kan.; Rush Medical College, Chicago, 1892; member of the Kansas Medical Society; aged 77; died, January 9.

Giovanni Castaldi, Providence, R. I.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1923; aged 42; died, Dec. 12, 1941, in Boston.

William Laban Moore, St. Louis; Barnes Medical College, St. Louis, 1899 and 1907; aged 67; died in February at the Missouri Baptist Hospital.

Theodore A. Nichols, Mission San Jose, Calif.; University of California Medical Department, San Francisco, 1885; aged 80; died, January 16.

James Robert George, Fredonia, Texas; University of Tennessee Medical Department, Nashville, 1897; aged 67; died, February 4, of endocarditis.

Thomas Lucius Shaffner, Los Angeles; University of Southern California College of Medicine, Los Angeles, 1889; aged 79; died, January 3.

Iva Seal Thompson, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1902; died, February 17, in the Woman's Hospital.

Leo Francis Driscoll, Brookline, Mass.; Georgetown University School of Medicine, Washington, D. C., 1929; aged 40; died, Dec. 20, 1941.

Mark Clyde Jones, Joliet, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; served during World War I; aged 70; died, February 10.

David Leslie Lowry, Teague, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1906; aged 62; died, February 7.

Mahlon William Locke, Williamsburg, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1905; aged 61; died, February 7.

Joseph Stevenson, Louisville, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1901; aged 81; died, January 28.

George Jordan Mehler ● Lynbrook, N. Y.; University and Bellevue Hospital Medical College, New York, 1924; aged 40; died, February 1.

J. Walter Carryer, Columbia, Mo.; Cincinnati College of Medicine and Surgery, 1878; aged 87; died, February 9, of chronic bronchitis.

Lewis Alfred Querner, Toledo, Ohio; Medical College of Ohio, Cincinnati, 1909; served during World War I; aged 54; died, January 31.

Alexander Leslie Marshall ● Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1910; aged 52; died, February 2.

Edwin H. Jones, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1889; aged 79; died, January 21.

Berry W. Fite ● Resaca, Ga.; Southern Medical College, Atlanta, 1887; aged 79; died, January 13, of coronary occlusion.

William Lewis Elmore, Frankfort, Ky.; College of Physicians and Surgeons, Baltimore, 1883; aged 85; died, January 11.

Paul Louis Gailmard, Ekalaka, Mont.; Emory University School of Medicine, Atlanta, 1926; aged 39; died, January 13.

William Ivanhoe Kinsley, San Diego, Calif.; Bennett Medical College, Chicago, 1909; aged 63; died, January 27.

John McAllister, New York; Albany Medical College, 1879; aged 90; died, February 6, at his home in Scarsdale.

John Francis Oslin, Providence, R. I.; Tufts College Medical School, Boston, 1920; aged 46; died, February 7.

Thomas F. Brady, Detroit; Detroit College of Medicine, 1903; aged 63; died, January 31, of coronary thrombosis.

Rolla Beatty Fore, Blanchard, Pa.; Baltimore University School of Medicine, 1898; aged 64; died, February 21.

Charles H. Hodson, Vacaville, Calif.; Eclectic Medical Institute, Cincinnati, 1881; aged 85; died, January 14.

William Joseph Sullivan, Baltimore; Maryland Medical College, Baltimore, 1901; aged 71; died, January 30.

Bureau of Investigation

SCIENTIFIC (SIC) MANUFACTURING COMPANY, INC.

Actions of Various Federal Agencies Against the Concern and Its President, Howard J. Force

From Scranton, Pa., the Scientific Manufacturing Company, Inc., with a Howard J. Force as president, sold through the mails a nostrum called "Dialin." It was promoted as a remedy for diabetes with the promises "New achievement, DIALIN, reduced sugar and thirst. Widely used . . . Modified diet. No needle." Such claims, of course, implied that a diabetic patient could give up insulin and substitute Dialin. Those who answered the advertisement received extensive literature including testimonials from lay users as well as from osteopaths, chiropractors, and one doctor of medicine. According to the directions one was to take a teaspoon of the preparation in a little water after meals. Also when the sugar had been reduced to normal the dose was to be cut down one half for about four weeks. Then too there were furnished "suggestions to those using Dialin." These were to the general effect that aluminum and aluminum baking powder should not be used; that brown sugar, molasses, honey, cracked wheat or whole wheat bread should be taken and saccharin and pasteurized milk should be avoided. The purchaser was advised to eat the things that he knew would agree with him, but nothing was said to help one determine which foods would agree with him.

As the scheme appeared to the Post Office Department to be a means of obtaining money through the mails on false and fraudulent pretenses, representations and promises, that agency on Feb. 17, 1941 ordered the promoters to show cause on March 13 why their business should not be debarred from the mails. After several postponements the hearing took place on April 30 and H. J. Force appeared with his attorney. At the hearing it was brought out that Dialin had been offered to the public under the representations that when used as directed it would quickly overcome and relieve the "weak and tired feeling" and "that great thirst" common to the diabetic; that Dialin, when used as directed by any person in the advanced stages of diabetes, would completely normalize or materially reduce the sugar content of both blood and urine, remove the cause of diabetes and cure this condition, besides being an effective substitute and eliminating the necessity for insulin injections.

The defendants' answer denied these charges and alleged in substance that all their claims for Dialin were true and correct and that they had not knowingly misrepresented it in any way but had attempted to make clear to all prospective purchasers that the thing was not a *cure* for diabetes. H. J. Force testified that he had developed Dialin and had experimented with it for about two years before placing it on the market in 1936. The reason for its development, he said, was the necessity for providing a friend, who was diabetic and refused to take insulin, with a preparation which would help her control her condition. Force admitted that except for his training obtained in the New Jersey College of Pharmacy and his subsequent practical experience in the field of chemistry he had no specialized knowledge of medicine.

A qualified chemist who appeared for the government at the hearing testified that his analysis of Dialin showed that each teaspoon of it contained 2.16 grains of magnesium carbonate, 3.48 grains of sodium bicarbonate, 14.9 grains of glycerin, 3.372 grains of plant material including rhubarb and ipecac, 0.32 grain of peppermint, 0.925 grain of alkaloids, 0.01 grain of iron, a small amount of alcohol and traces of phosphate, citrate and calcium. Substantially the same information appeared on the Dialin label.

Another government witness was a physician who specializes in the treatment of diabetes and lectures on that subject in a leading medical school. His testimony covered the causes and symptoms of this disease and outlined its scientific treatment. From this standpoint he showed that the use of a "patent medicine" like Dialin is utterly discredited as a treatment for diabetes. Force attempted to refute the physician's testimony by presenting that of a lay user of Dialin and testimonial letters of a doctor of medicine and several osteopaths and chiropractors. These testimonials, however, failed to state the dietary restrictions observed by the respective patient at the time that Dialin was being used or else did state that the patient had observed a certain prescribed diet.

As Force was unable to disprove the charges brought against him, the Post Office on Aug. 16, 1941 issued a fraud order debarring the Scientific Manufacturing Company, H. J. Force, president, and their officers and agents from the mails. Force, however, like some other promoters of mail order medical fakes, did not discontinue his scheme but simply changed its trade style, operating under the name Howard Force and continuing to send out literature similar to that revealed by the government's earlier investigation. He advised his correspondents that the product would be shipped by Howard Force *by express* and that the purchaser should not remit by postoffice money order in payment but should send cash, express order or check. When the Post Office discovered this evasion it issued a supplementary fraud order against the name of Howard Force under date of Oct. 10, 1941.

Incidentally, two additional government agencies have taken action against Force or the concern with which he is connected. In March 1933 the Food and Drug Administration seized a consignment of "Menno" that had been shipped in interstate commerce by the Scientific Manufacturing Company, Inc., and charged that the label bore false and fraudulent claims as to its curative effect on indigestion, "gas condition" and ptomaine poisoning, among other things. Government chemists reported that it consisted essentially of plant drugs including a laxative with glycerin, alcohol and water, small amounts of sodium and magnesium carbonates and a trace of ipecac alkaloids. As the company neither put up a defense nor claimed the property, the latter was confiscated.

Similar charges were made against another interstate consignment of Menno shipped around the same time with a quantity of "Pheno-Isolin," another of the concern's products. The government charged that the labels of Pheno-Isolin bore false and fraudulent representations, such as that it is effective to prevent and destroy infection and to act as a local antitoxin. According to a government chemist, Pheno-Isolin was found to be nothing more wonderful than a mixture consisting essentially of turpentine, camphor, menthol and resin dissolved in an oil and would require many hours of contact with bacteria before exerting any germicidal action. Tests also showed that it was not an antitoxin. In this case, tried in a district federal court, the defendants entered pleas of *nolo contendere* and the court imposed a fine of $30.

Another seizure of a shipment of Pheno-Isolin in interstate commerce was made in August 1933 on charges similar to those already mentioned, and since the Scientific Manufacturing Company, Inc., made no reply in this case the consignment was confiscated by the court.

On April 30, 1938 another government agency, the Federal Trade Commission, announced that as the result of a complaint that it had brought against the Scientific Manufacturing Company, Inc., that concern had signed a stipulation in which it promised the Commission to discontinue on its labels or in its advertising matter misrepresentations to the effect that Pheno-Isolin possesses antitoxic properties or acts as a "sure" germicide when used in connection with the treatment of certain maladies or that, when used as directed, the product destroys infection, dissolves all kinds of bacteria or does a few other things.

In April 1941 the Commission took further action against the Scientific Manufacturing Company, Inc., and Howard J. Force by issuing a complaint against them for representing that "Pheno-Isolin" and "Pheno-Isolin Ointment" constitute competent antiseptics and germicides and possess substantial therapeutic value in treating skin infections generally. Some twenty specific ailments or conditions, including ulcers, carbuncles, abscesses, diphtheria and influenza, were mentioned as disorders for which the products in question were excessively recommended. At the same time the Commission also charged the respondents with representing that their Dialin constitutes a remedy and effective treatment for diabetes and benefits a

diabetic person in various specific ways. The complaint further was directed against testimonials in the advertising matter which were alleged to have been written by physicians. According to the complaint, the respondents' preparations are not used or recommended by the medical profession generally. Shortly afterward Force and his concern replied with a general denial of the charges, and it appears that the case has not yet been concluded.

On Feb. 1, 1941 the Commission reported that it had ordered the Scientific Manufacturing Company, Inc., and its president, Howard J. Force, to discontinue misrepresentations contained in the pamphlets entitled "Poisons Formed by Aluminum Cooking Utensils" and "Are You Heading for 'The Last Round-Up'?" These were to the effect that food prepared or stored in aluminum utensils is unsafe, deleterious, disease producing, poisonous or otherwise dangerous to the health. Subsequently, however, according to *Editor and Publisher* for Jan. 17, 1942, the United States Circuit Court set aside the Cease and Desist order, ruling that, since the Scientific Manufacturing Company and H. J. Force do not make cooking utensils of nonaluminum material and hence no competition exists between them and manufacturers of aluminum cooking utensils, the antialuminum pamphlets mentioned merely represent statements of opinion rather than unfair trade practice.

Howard J. Force has long been one of those who have promoted the preposterous propaganda against aluminum cooking utensils. He has cited as sponsors of his cause a list of alleged physicians. When their names were looked up it was found that few of them were doctors of medicine; many were already in the Bureau of Investigation's quackery files for other professional irregularities. Additional representatives of the anti-aluminum following are reported to have given testimonials for Pheno-Isolin, including Charles T. Betts of Toledo, an early leader in the movement, the questionable Koch Laboratories of Detroit, promoters of a "cancer cure," and the utterly quackish Baker cancer outfit. The latter, once at Muscatine, Iowa, but in its final days at Eureka Springs, Ark., seems to have closed up shop since the government sent its promoter, Norman Baker, to prison in 1941 for conducting a mail order fraud.

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are brief abstracts of some fraud orders not dealt with previously:

Esselstein's "Cancer Cure."—From Spokane, Wash., one W. C. Esselstein, using "N.D." after his name, put out a treatment that he variously called "W. C. Esselstein's Internal Cancer Formula Soluble Organic Food" and "Esselstein's American Herb Formula." The Post Office investigation disclosed that he advertised it through the mails by means of small cards that recommended it "for treating all internal and external cancers, fibroid tumors, stomach ulcers, arthritis and abdominal diseases" and that he represented that it had cured him of an internal cancer and would do as much for others. In one of his follow-up letters to an inquirer, it was reported, he claimed that it would restore users to "health even after they were considered beyond medical aid," and that it could safely be used by any one. With the treatment went certain dietary instructions and a warning against the use of aluminum cooking utensils. According to the Post Office memorandum on the case, Esselstein claimed that his nostrum consisted of cascara bark, senna leaves, water pepper, yerbo santa, American saffron, bloodroot and water, with sodium benzoate as a preservative, and this composition was indicated by the government chemists' analysis. An expert medical witness testified that neither this mixture nor any other would check or eliminate cancerous growths in the body and that, in fact, Esselstein's nostrum, by its irritating effect, might aggravate cancerous conditions and also cause the rupturing of a diseased appendix. The Post Office's findings, therefore, were that Esselstein's scheme amounted to obtaining money through the mails by means of fraudulent pretenses, representations and promises, and a fraud order was accordingly issued on Oct. 15, 1940 debarring it from the mails.

Magic Oil Company and Carl G. Schnepel.—"Magic-Oil Liniment" also known as "Carls Magic-Oil Liniment" was the product that Carl G. Schnepel, operating from Colorado Springs as the Magic Oil Company, sold through the mails. According to the Post Office memorandum on this case he promoted the product under the false and fraudulent representations that his product would effectively overcome rheumatism, neuritis and arthritis, cure athlete's foot, remove eczema and eradicate colds, sore throat, hay fever and asthma. According to the memorandum, the business was started in Omaha in 1933 and after moving to several other places it was established in Colorado Springs in September 1940. Testimonials, of course, were played up in the advertising. When an investigator for the Post Office questioned Mr. Schnepel as to the composition of his liniment, he replied that it contained oils of wintergreen, mustard and eucalyptus, as well as camphor, turpentine, menthol, salicylic acid and acetone. A government chemist found all of these except acetone present in the product. Although Schnepel sent eleven separate communications to the Post Office, in general denying the allegations of fraud, he neither put in an appearance at the hearing on Dec. 20, 1940 nor sent a representative. At this hearing an expert medical witness for the government testified that a mixture such as this liniment is essentially a counterirritant and produces its effects by irritation of the outer layers of the skin. Hence it might offer temporary palliation for the aches and pains incident to some types of arthritis and rheumatism but, as the witness pointed out, "the presence of foci of infection in the body, venereal diseases and other factors are often involved in the onset of rheumatism and arthritis." The findings at the hearing were that the sale of this liniment constituted a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and on Jan. 7, 1941 a fraud order was issued against various forms of the names of Carl G. Schnepel and the Magic Oil Company.

Relivo Products Company.—Under this trade style one Joseph R. Jefferis of Indianapolis sold through the mails three products called "Relivo Salets," "Nervilo" and "Urlaxo." The first named was sold under representations that when used as directed it would cure rheumatism, neuritis, gout, lumbago, neuralgia and arthritis and overcome all pains and aches resulting therefrom, besides having no bad effects on the user. A government chemist testified that each tablet of this nostrum (12.5 grains) contained 4.2 grains of acetophenetidin, 4.2 grains of acetylsalicylic acid and 0.33 grain of phenolphthalein. Nervilo Tablets, according to the advertising, were supposed "to represent a balanced formula for the treatment of the nerves," to overcome nervousness, "jitters" and sleeplessness and were represented as a safe and dependable nerve tonic. The chemist testified that each tablet contained 0.1 grain of phenobarbital, a trace of mydriatic alkaloid and, for the rest, mostly powdered kaolin and a small amount of powdered okra. Urlaxo was represented to overcome and prevent gallstones and correct the cause of biliousness, congested liver and dyspepsia and restore a free flow of bile and proper intestinal and gastric digestion. The same chemist reported that this nostrum contained small amounts of emodin, bile salts, salicylate and phenolphthalein. The Post Office found that the sale of these nostrums constituted a scheme for obtaining money through the mails under false and fraudulent pretenses and on Oct. 16, 1940 debarred the Relivo Products Company from further use of the mails.

T. J. Hutton, M.D.—On July 25, 1940 the Post Office Department served notice on T. J. Hutton, M.D., of Powers, Mich., to show cause, at a hearing to be held on September 3, why a fraud order should not be issued against him for soliciting remittances of money through the mails for an alleged treatment for tuberculosis. According to the Post Office memorandum Dr. Hutton disparaged the use of surgery and claimed that his treatment was significantly different from and more effective than any methods regularly prescribed by tuberculosis specialists; that it would cure, within one year, practically all cases of tuberculosis including those in the advanced stages; that various medicines he furnished were valuable and effective adjuncts to measures regularly used for tuberculosis and were necessary for the cure of that disease and that by means of information supplied by customers to whom he sent blanks he could correctly diagnose and properly prescribe for all persons suffering from tuberculosis without personally examining them. The memorandum went on to show that Dr. Hutton started this business in 1912 and advertised it in various publications, following up inquiries with form letters. Hutton neither appeared at the government hearing nor sent a representative. A chemist and a microanalyst in the employment of the government testified to finding the following composition in Hutton's medicines:

Red Pills: In each, essentially 2 grains of creosote, 0.83 grain of acid insoluble material, probably talc, 0.18 grain of iron and about 2 grains of calcium, coating and color.
White Powder (in paper box): Essentially potassium chloride.
Second White Powder: Found on microscopical examination to contain finely ground bone (including some calcium carbonate), also material closely resembling precipitated calcium phosphate.
Granular White Powder: Essentially sodium chloride and moisture.
Colorless Liquid: Essentially an aqueous solution containing 0.94 per cent of solid material, mostly sodium chloride and about 0.08 per cent of phenol.
Second Colorless Liquid: An aqueous solution containing 2.22 per cent of solid material, mostly sodium chloride and about 0.09 per cent of phenol.

These products were to be taken internally, some to be sprinkled on the food, others to be consumed in doses before meals and the liquids to be injected under the skin by means of a hypodermic needle. An expert medical witness testified for the government on the different forms of tuberculosis and the scientific treatment therefor and showed that under Hutton's method the patient was deprived not only of a physician's personal examination and care but also of any opportunity for surgical measures, both of which, the expert witness pointed out, are essential to successful treatment of many cases of tuberculosis. He also brought out that the chart supplied by Dr. Hutton to his mail-order "patients" is not a correct guide to follow for proper diagnosis and treatment, nor would the combination of the Hutton medicines constitute a scientific treatment for tuberculosis. Accordingly the Post Office Department on Sept. 21, 1940 declared Hutton's scheme a fraud and debarred it from the mails.

Correspondence

SURGERY FOR CANCER OF THE PROSTATE

To the Editor:—In THE JOURNAL, March 7, page 855, there is a statement with regard to cancer of the prostate. In the first paragraph of the reply to the question it is stated that:

> It is the opinion among urologists that once the diagnosis of carcinoma of the prostate has been made it is technically impossible to do any sort of surgical procedure that would effect a cure. Once the diagnosis of carcinoma of the prostate has been definitely made, the condition is no longer surgical.

Undoubtedly the opinion that is expressed is held by a large proportion of urologists, chiefly those who have never done a perineal prostatectomy. A small but steadily increasing number have become convinced of the soundness of Hugh Young's teachings concerning the value of total perineal prostatectomy for selected cases of early prostatic cancer. Frank Hinman, Alexander Randall and Roy Henline are among the men who believe this operation worth while.

This is not the occasion for a lengthy review of the results obtained by various operators. It may be enough to point out that 1 of Young's patients lived twenty-five years after operation without evidence of recurrence and that of 38 patients with favorable prognosis 50 per cent lived five years or more after operation without evidence of recurrence or metastasis.

"One patient died less than five years after operation of another disease. A careful autopsy showed no recurrence or metastases." (Young H. H.: *Surg., Gynec. & Obst.* **64**:472 [Feb.] 1937).

In my own series of around 80 patients, there are 2 alive and well thirteen years after operation, and at least 25 are living from one to twelve years after prostatectomy. The prostate of the last patient operated on, carefully sectioned after its removal, proved to contain but one focus of adenocarcinoma. This nodule was 1 cm. in diameter but, as is usually the case, it was situated close to the periphery of the gland and could easily be detected on rectal palpation. As proof of the fact that no superhuman diagnostic acumen is required for the recognition of these cases, let me say that a considerable proportion of the early cases have been referred to me by internists who have discovered suggestive prostatic nodules on routine rectal examination.

There is no certainty of obtaining a cure in any case of cancer, no matter what organ is involved. The percentage of probable cures achieved by total prostatectomy in my own series is around 25 per cent, but with the newer methods of treating prostatic cancer it seems reasonable to expect that, even if the growth develops elsewhere, from metastases which had taken place before operation, it may be controlled by castration and the administration of diethylstilbestrol.

The statement says "Once the diagnosis of carcinoma of the prostate is definitely made, the condition is no longer surgical." The diagnosis of any cancer can be made "definitely" only by microscopic examination of the tissue. Even this criterion can be fulfilled, in the case of prostatic cancer, by a biopsy of the suspected area after the prostate has been exposed by a perineal approach. This is done frequently in cases of early involvement, and if the report is positive total prostatectomy is then performed.

The fact that there are not many urologists well enough trained in the perineal approach to perform total prostatectomy does not justify the statement that the operation cannot be done. I regret to say that THE JOURNAL is misinformed with regard to the treatment of early cancer of the prostate.

GEORGE GILBERT SMITH, M.D., Brookline Mass.

LOCAL USE OF SULFONAMIDE COMPOUNDS

To the Editor:—The article by Dr. Frederic W. Taylor on the misuse of sulfonamide compounds, which appears in the March 21 issue of THE JOURNAL, paints a discouraging picture with regard to the local use of these drugs. Although his experimental observations are no doubt true, from a practical point of view and experience with the clinical use of these drugs, the advantages of their local use, it seems to me, far outweigh the disadvantages. I have recently been interested in the use of sulfathiazole prepared in the microcrystalline form. The details of the preparation will be reported elsewhere. I wish to state here, however, that the crystals are of uniform size and are extremely small. The advantage of this type of preparation is the fact that a considerably greater surface exposure is permitted so that the drug, although no more soluble, goes into solution more readily.

When the material is applied with an insufflator into fresh traumatic wounds or operative wounds in which infection might be expected, as for instance in closure of a colostomy, the wounds heal without any apparent inflammatory reaction. Although Dr. Taylor has reported the finding of abscesses around sulfathiazole crystals in wounds my experience has been exactly the reverse. The wounds heal primarily without serum or inflammatory reaction, and I have not had 1 single case in which there was any evidence of the formation of an abscess. As a matter of fact, the results that I have obtained in cases in which wounds were closed and in which a definite infection was to be expected were remarkable. I now feel so confident about the use of this drug that I have closed numerous colostomies without drainage and have had no instance of infection developing.

As to the use of the sulfonamide drugs in the abdomen, I have had an interesting experience, both clinically and experimentally, concerning this question. There is no doubt that the application of a powdered drug, especially the powdered insoluble drugs such as sulfathiazole or sulfadiazine, does produce a local conglomeration of the drug with some peritoneal reaction and a foreign body type of reaction. The microcrystalline preparation can be suspended in saline solution in a strength of 10 or 20 per cent. This forms a material much like magma magnesiae, which remains in suspension and which can be injected through a syringe. When introduced into the abdomen there is general spreading of the drug throughout the abdominal cavity, and I have not found a single instance of any evidence of a peritoneal irritation when the abdomen in experimental animals was examined five to seven days after the implantation of the drug. In clinical usage also the drug has proved to be extremely valuable, and there has been no evidence of any peritoneal irritation, although I have not had an opportunity to examine an abdomen after the use of the drug.

I agree with Dr. Taylor in his suggestion that the use of the sulfonamides locally is unnecessary in routine incisions which are made for clean operations. On the other hand, I am of the opinion that the local use of these drugs, especially the microsulfathiazole preparation, in contaminated wounds and in traumatic lesions offers the maximum of protection against infection. Sulfathiazole is of more value than sulfanilamide in this respect in that it remains in the wound for a longer period and so exerts a longer action (three to four days). Furthermore, its effectiveness seems to be greater against a wider range of organisms than does the more soluble sulfanilamide.

L. KRAEER FERGUSON, M.D. Philadelphia.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

CHICAGO, Feb. 15-16, 1943. Sec., Council on Medical Education and Hospitals, Dr. H. G. Weiskotten, 535 North Dearborn Street, Chicago.

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, April 18, page 1398.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 16-18. Acting Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARKANSAS: * *Medical.* Little Rock, June 4-5. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, June 4-5. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* San Francisco, June 29-July 2. *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), Los Angeles, May 20. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

DELAWARE: Dover, July 14-16. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

FLORIDA: * Jacksonville, June 22-23. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, July 13-16. Sec., Dr. James A. Morgan, 55 Young Bldg., Honolulu.

ILLINOIS: Chicago, June 23-25. Superintendent of Registration, Mr. Philip M. Harman, Department of Registration and Education, Springfield.

INDIANA: Indianapolis, June 16-18. Sec., Board of Registration and Examination, Dr. J. W. Bowers, 301 State House, Indianapolis.

IOWA: * Iowa City, May 11-13. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Kansas City, June 2-3. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 903 N. Seventh St., Kansas City.

KENTUCKY: Louisville, May 27-29. Sec., State Board of Health, Dr. A. T. McCormack, 620 S. Third St., Louisville.

MARYLAND: *Medical.* Baltimore, June 9-12. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 16-17. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN: * Ann Arbor and Detroit, June 2-5. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing.

MISSISSIPPI: Jackson, June 24-25. Assistant Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MISSOURI: St. Louis, June 4-6. Sec., Board of Health, Dr. James Stewart, State Capitol Bldg., Jefferson City.

NEW JERSEY: Trenton, June 16-17. Sec., Dr. Earl S. Hallinger, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 22-25. Chief, Bureau of Professional Examinations, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 15. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, July 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Written.* Columbus, June. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, June 3-4. Sec., Dr. James D. Osborn Jr., Frederick.

OREGON: * Portland, July 22-24. Application must be on file not later than July 9. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Act. Sec., Bureau of Professional Licensing, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

SOUTH CAROLINA: Columbia: June 22-24. Sec., Dr. A. Earle Boozer, 305 Saluda Ave., Columbia.

SOUTH DAKOTA: * Pierre, July 21-22. Dir., Medical Licensure, Dr. J. P. D. Cook, State Board of Health, Pierre.

UTAH: Salt Lake City, June 29-30. Assistant Dir., Department of Registration, Mr. G. V. Billings, 324 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 16-18. Sec., Board of Medical Registration, Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 3015 Franklin Rd., Roanoke.

WISCONSIN: * Milwaukee, June 30-July 3. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, June 1-2. Sec., Dr. M. C. Keith, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: June 13. Address State Board of Healing Arts, 1945 Yale Station, New Haven.

FLORIDA: Gainesville, June 8. Sec., Professor J. F. Conn, John B. Stetson University, De Land.

MICHIGAN: Ann Arbor and Detroit, June 12-13. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: Omaha, May 5-6. Dir., Bureau of Examining Boards, Mrs. Jeannette Crawford, 1009 State Capitol Bldg., Lincoln.

NEW MEXICO: Springer, June 12. Sec., Miss Pia Joerger, State Capitol, Santa Fe.

OKLAHOMA: Oklahoma City, May 15. Sec., Dr. Oscar C. Newman, Shattuck.

OREGON: Corvallis, July 11. Application must be on file not later than June 24. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, May 20. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Vermillion, June 5-6. Sec., Dr. G. M. Evans, Yankton.

WISCONSIN: Milwaukee, June 6. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Hospitals: Interns Are Not "Students."—The petitioner, and others on whose behalf he sued, having completed a medical course and received a degree from an accredited medical school, was serving an internship in a New York hospital supported wholly or partly at public expense. Section 150 of the Election Law of the state provides, among other things, that an eligible voter must have been an inhabitant of the state for the preceding year, a resident of the county for four months and a resident of the election district for thirty days. Section 151 provides that "for the purpose of registering and voting no person shall be deemed to have gained or lost a residence . . . while a student of any seminary of learning; nor while being kept at any almshouse, or other asylum, or institution wholly or partly supported at public expense or by charity. . . ." Contending, in effect, that the petitioner was either a "student" or a "kept" person within the meaning of section 151 and hence, apparently, not a resident of the county in which the internship was being served, the commissioners of election of the county of Monroe refused to accept his registration as a voter. Accordingly the petitioner, on behalf of himself and all others similarly situated, applied to the supreme court, Monroe County, New York, for an order directing the commissioners to accept the registration of himself and of the others.

The supreme court said that there is a difference between "students" and "interns." The medical practice act, it was pointed out, defines students as persons who are "matriculated and enrolled in medical school," although they are permitted to perform some functions in hospitals. An intern, on the other hand, has already completed his medical course and is serving on the resident staff of the hospital. The petitioner, as an intern, received no wages but he did receive room, board and maintenance and was on day and night call at the hospital. That was far different, said the court, from the freedom normally associated with student life. The supreme court also held that the petitioner was not "kept" within the meaning of the law. He was not a beneficiary of the charity of a publicly supported hospital but was working for the hospital under a written contract. The court therefore ordered the commissioners and inspectors of elections to register the petitioner and others on compliance with the statutory requirements of the election law.—*Rathbun v. Smith, 23 N. Y. S. (2d) 95 (N. Y., 1940).*

Charitable Hospitals: Liability for Tort Conditioned on Liability for Taxation.—While the plaintiff was a pay patient in the defendant hospital, a charitable institution, she received injuries due to the alleged negligence of the defendant's servants in applying a hot pad. In a subsequent suit against the hospital, the plaintiff recovered a judgment in the trial court. This judgment was affirmed by the court of appeals with the modification that none of the defendant's property which was held in trust and was being used for charitable purposes might be subjected to satisfaction of the judgment. From this judgment the defendant appealed to the Supreme Court of Tennessee.

The evidence disclosed that the defendant corporation owned, in addition to the hospital plant and equipment, a nurses' training school, a large office building, a retail drug store, an interest in a surgical supply house, and a farm valued at $200,000. The total income derived by the hospital from these properties exceeded $230,000 annually. The hospital itself received both charity and pay patients, and other buildings on the hospital premises afforded hotel accommodations, including room and meals, to friends and relatives of patients. The defendant contended, in effect, that it was immune from tort liability because of its charitable nature, that all of its income, from whatever source, was devoted to hospital purposes—was property held in trust for the benefit of a charitable institution—and that therefore none of its property was subject to levy

in satisfaction of the judgment. The Supreme Court held that, according to the Tennessee law, a judgment could be rendered against a charitable institution when it appeared that satisfaction therefor could be had without encroaching on property devoted strictly to trust purposes. Furthermore, that the immunity of such property depended on its direct and exclusive use in the operation of the trust. The court noted an analogy between the exemption of a charitable institution from taxation and its immunity from liability for tort. In 1935 the legislature redefined the tax exemption of charitable organizations by providing that they were exempt from taxation only to the extent that their property was used exclusively for charitable purposes. The court said that a similar rule should be applicable to a case of this nature and that property exempt from tax liability should also be exempt from tort liability. Since it was clear to the Supreme Court in this case that the defendant did own property of great value which was subject to taxation, it was evident that a judgment could be satisfied out of that property without resorting to, or impairing, trust assets. The judgment for the plaintiff was accordingly affirmed.—*Baptist Memorial Hospital v. Couillens, 140 S. W. (2d) 1088 (Tenn., 1940).*

Insanity: Liability of Physician for Certifying to Insanity When Appointed by Court.—In this case, a county court commissioner, in accordance with procedure authorized by statute, appointed two physicians to examine the plaintiff and report to the court as to her mental condition. The physicians found her insane and so reported to the court. On the strength of that report, the plaintiff was committed to an asylum. Subsequently she sued the commissioner, the two physicians and another for malicious prosecution. The trial court sustained demurrers interposed by the defendants and the plaintiff appealed to the Supreme Court of Minnesota.

In affirming the action of the trial court, the Supreme Court pointed out that a judge is not liable in a civil action to any one for his judicial acts, however erroneous or by whatever motives prompted, that the physicians were quasijudicial officers and that what they did was in the scope of their duties as such. That being so, these physicians, the Court concluded, were within the protection of the rule and immune from suit.—*Linder v. Foster et al., 295 N. W. 299 (Minn., 1940).*

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, N. J., June 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Atlantic City, N. J., June 8-9. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

American Association for the Study of Goiter, Atlanta, Ga., June 1-3. Dr. Thomas C. Davison, 478 Peachtree St. N.E., Atlanta, Ga., Secretary.

American Association for the Surgery of Trauma, Boston, June 4-6. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association of Genito-Urinary Surgeons, Hershey, Pa., May 27-29. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of the History of Medicine, Atlantic City, N. J., May 3-5. Dr. Henry E. Sigerist, 1900 East Monument St., Baltimore, Secretary.

American Association on Mental Deficiency, Boston, May 13-16. Dr. Neil A. Dayton, 100 Nashua St., Boston, Secretary.

American Broncho-Esophagological Association, Atlantic City, N. J., June 8-9. Dr. Paul H. Holinger, 700 North Michigan Blvd., Chicago, Secretary.

American College of Chest Physicians, Atlantic City, N. J., June 6-8. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American Dermatological Association, Hot Springs, Va., May 31-June 4. Dr. Harry R. Foerster, 208 East Wisconsin Ave., Milwaukee, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., June 8-9. Dr. J. Arnold Bargen, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Gynecological Society, Skytop, Pa., June 15-17. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Heart Association, Atlantic City, N. J., June 5-6. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Human Serum Association, Atlantic City, N. J., June 8. Dr. Maurice Hardgrove, 3321 North Maryland Ave., Milwaukee, Secretary.

American Laryngological Association, Atlantic City, N. J., May 25-27. Dr. Charles J. Imperatori, 108 East 38th St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., June 1-3. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Atlantic City, N. J., June 6-7. Dr. Ada Chree Reid, 102 East 22d St., New York, Secretary.

American Neurological Association, Chicago, June 4-6. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 1-3. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Baltimore, June 3-6. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Otological Society, Atlantic City, N. J., May 28-29. Dr. Isidore Friesner, 101 East 73d St., New York, Secretary.

American Pediatric Society, Sky Top, Pa., Apr. 30-May 2. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Proctologic Society, Atlantic City, N. J., June 7. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Psychiatric Association, Boston, May 18-22. Dr. Winfred Overholser, St. Elizabeths Hospital, Washington, D. C., Secretary.

American Radium Society, Atlantic City, N. J., June 8-9. Dr. Axel N. Arneson, 4952 Maryland Ave., St. Louis, Secretary.

American Society for Clinical Investigation, Atlantic City, N. J., May 4. Dr. Eugene M. Landis, University of Virginia Hospital, Charlottesville, Va., Secretary.

American Society of Clinical Pathologists, Philadelphia, June 5-7. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Atlantic City, N. J., June 5-6. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, New York, June 1-4. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Arizona State Medical Association, Prescott, May 25-30. Dr. W. Warner Watkins, 15 East Monroe St., Phoenix, Secretary.

Arkansas Medical Society, Hot Springs National Park, Apr. 27-29. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association for the Study of Internal Secretions, Atlantic City, N. J., June 8-9. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City, Secretary.

Association of American Physicians, Atlantic City, N. J., May 5-6. Dr. Hugh J. Morgan, Vanderbilt University Hospital, Nashville, Tenn., Secretary.

California Medical Association, Del Monte, May 4-7. Dr. George H. Kress, 450 Sutter St., San Francisco, Secretary.

Connecticut State Medical Society, Middletown, June 3-4. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Georgia, Medical Association of, Augusta, Apr. 28-May 1. Dr. E. D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

Illinois State Medical Society, Springfield, May 19-21. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Kansas Medical Society, Wichita, May 11-14. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Louisiana State Medical Society, New Orleans, Apr. 27-29. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, Apr. 28-30. Dr. Richard T. Shackelford, 1211 Cathedral St., Baltimore, Secretary.

Massachusetts Medical Society, Boston, May 26-27. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Medical Library Association, New Orleans, May 7-9. Miss Anna C. Holt, 25 Shattuck St., Boston, Secretary.

Mississippi State Medical Association, Jackson, May 12-14. Dr. T. M. Dye, P. O. Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, Apr. 27-29. Mr. E. H. Bartelsmeyer, 634 North Grand Blvd., St. Louis, Executive Secretary.

National Gastroenterological Association, New York, June 3-5. Dr. G. Randolph Manning, 1819 Broadway, New York, Secretary.

National Tuberculosis Association, Philadelphia, May 6-9. Dr. Charles J. Hatfield, 1790 Broadway, New York, Secretary.

Nebraska State Medical Association, Omaha, May 4-7. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 12-13. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New York, Medical Society of the State of, New York, Apr. 27-30. Dr. Peter Irving, 292 Madison Ave., New York, Secretary.

New York State Association of Public Health Laboratories, Cooperstown, May 18. Miss Mary B. Kirkbride, New Scotland Ave., Albany, Secretary.

North Carolina, Medical Society of the State of, Charlotte, May 11-13. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Jamestown, May 18-20. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Columbus, Apr. 28-30. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

Pacific Coast Oto-Ophthalmological Society, Portland, Ore., May 11-14. Dr. C. Allen Dickey, 450 Sutter St., San Francisco, Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 17-20. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Secretary.

Rhode Island Medical Society, Providence, June 3-4. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

Society for the Study of Asthma and Allied Conditions, Atlantic City, N. J., May 2. Dr. W. C. Spain, 116 East 53d St., New York, Secretary.

South Carolina Medical Association, Myrtle Beach, May 19-21. Dr. Julian P. Price, 103 West Cheves St., Florence, Secretary.

South Dakota State Medical Association, Sioux Falls, May 13-15. Dr. Clarence E. Sherwood, 107½ Egan Avenue South, Madison, Secretary.

Texas, State Medical Association of, Houston, May 11-14. Dr. Hulman Taylor 1404 West El Paso St., Fort Worth, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Anesthesiology, New York

3:1-122 (Jan.) 1942

Efficiency of Mixtures of Barium and Calcium Hydroxides in Absorption of Carbon Dioxide in Rebreathing Appliances. J. Adriani, New Orleans, and D. H. Botten, Brooklyn.—p. 1.
Development of Anesthesia (continued). T. E. Keys, Rochester, Minn.—p. 11.
Effects of Morphine, Atropine and Scopolamine on Human Subjects. C. P. Wangeman, Vancouver, Wash., and M. H. Hawk, Madison, Wis.—p. 24.
*Role of Picrotoxin in Treatment of Acute Barbiturate Poisoning. R. K. Richards and J. G. Menaker, Chicago.—p. 37.
Combined Use of Ephedrine and Epinephrine in Spinal Anesthesia: Preliminary Report. S. Rochberg and Virginia Apgar, New York.—p. 49.
*Serial Spinal Anesthesia. F. P. Haugen, H. S. Ruth and I. B. Taylor, Philadelphia.—p. 52.
The Anesthetist's Interest in Lipiodobronchography. R. B. Sommerfield, Los Angeles.—p. 61.
Fluid Therapy Before and After Operation. J. H. Fine, Beverly, Mass.—p. 65.
Role of Alkaloids of Belladonna Plants in Clinical Anesthesia. M. L. Phelps, New York.—p. 71.
Massive Atelectasis During Anesthesia: Case. M. C. Peterson and I. M. Pallin, New York.—p. 79.

Picrotoxin in Acute Barbiturate Poisoning.—Richards and Menaker cite 11 cases of barbiturate poisoning treated with picrotoxin. In 1 case 105 grains (7 Gm.) of soluble phenobarbital and 1,944 mg. of picrotoxin were used, and recovery ensued. Five of the 11 patients died. With the exception of 1 patient who ingested only 18 grains (1.2 Gm.) of soluble phenobarbital, all of them presented severe poisoning. Published reports on the use of picrotoxin reveal that the authors attribute to the drug an important, frequently a life saving, role. Sudden acute death from respiratory failure due to oral barbiturate poisoning is rare; in fact, most of the patients who die do so two to five days after ingesting the drug. Death is due to general depression, to cerebral edema or to pulmonary complications. Treatment must be directed against these dangerous symptoms and the underlying cause for them removed. Experimental and clinical data indicate that picrotoxin possesses an extremely potent stimulating action on the depressed centers. Picrotoxin in barbiturate poisoning is not a panacea, and its use means neither that the problem is solved nor that other forms of treatment are superfluous.

Serial Spinal Anesthesia.—Haugen and his co-workers believe that the term "continuous spinal anesthesia" does not adequately describe Lemmon's technic and suggest "serial [repeated] spinal anesthesia." Their clinical experience, although meager, confirms the belief that the element of control introduced by the method is a definite advantage for many types of operation: the initial dose is smaller, which increases safety; the anesthesia may be maintained over a prolonged period; failure may be prevented in the rare case in which a large dose is required. The disadvantages are largely technical, one of them being that special equipment is required.

Maine Medical Association Journal, Portland

33:1-20 (Jan.) 1942

Medical Queries Answered. H. T. Karsner, J. H. Pratt, W. B. Dameshek, Boston, and J. Gottlieb, Lewiston.—p. 1.
The More Common Chemical Values and Their Clinical Interpretations Including Chemotherapeutic Levels. J. Gottlieb and M. Chapin, Lewiston.—p. 10.

New England Journal of Medicine, Boston

226:81-126 (Jan. 15) 1942

Results of Fifteen Years of Cancer Control Program in Massachusetts. H. L. Lombard and Frances A. Macdonald, Boston.—p. 81.
The National Physicians' Committee. S. B. Weld, Hartford, Conn.—p. 84.
Value of Auscultation of Abdomen in Intestinal Obstruction. N. C. Stevens, Walpole, N. H.—p. 87.
Ewing's Tumor: Report of Case Demonstrating Characteristic Periodic Course. C. P. Roberts, Boston.—p. 90.
Syphilis. C. G. Lane and G. M. Crawford, Boston.—p. 97.

226:127-172 (Jan. 22) 1942

*Salmonella Suipestifer Infection in Boston: Report of Eleven Cases, with Autopsy Findings in Case of Bacterial Endocarditis Due to This Organism, and Study of Agglutination Reactions in This Infection. N. E. Goulder, Margaret F. Kingsland and C. A. Janeway, Boston.—p. 127.
*Action of Furmethide (Furfuryl-Trimethyl-Ammonium Iodide) on Bladder in Patients with Urinary Retention Following Surgery on Rectum: Preliminary Report. J. H. Lipton, S. B. Brasor and M. D. Altschule, Boston.—p. 138.
Primary Adenocarcinoma in Meckel's Diverticulum. H. L. Albright and J. S. Sprague, Boston.—p. 142.
Gynecology: Endometriosis. J. V. Meigs, Boston.—p. 147.

Salmonella Suipestifer Infection.—From their survey of the clinical features of Salmonella suipestifer infections it is apparent to Goulder and his collaborators that although the disease tends to follow a course similar to typhoid it may localize in any site. The most frequent sites are the lungs, bones and joints. The infection appears most often when the resistance of the patient is low. Therefore epidemics of S. suipestifer infection tend to develop in populations already weakened by starvation and exposure, and the disease often appears sporadically in persons with some chronic disease. This fact may account for the resulting high mortality rate. The authors report the fourth case of endocarditis due to S. suipestifer. Except for the bacterial endocarditis, the postmortem observations in their patient, a woman of 58, were the usual ones. The salient features of the 4 cases of proved bacterial endocarditis due to S. suipestifer were in 3 endocarditis superimposed on a valve already damaged by rheumatic infection or syphilis, embolic phenomena, a high fever with chills and leukocytosis in all and changing murmurs in 3. The sulfonamide drugs were used in 3 of the 4 patients, but there was no evidence that the drugs had any appreciable effect. Their case of S. suipestifer endocarditis prompted the authors to review the occurrence of S. suipestifer infection during the last six years as encountered in the clinics cooperating with the Peter Bent Brigham Hospital. There were 10 instances of sporadic infection due to the European type of S. suipestifer; 6 occurred in children, 2 in newborn infants and 2 in parturient women. One of the newborn infants died after both bacteremia and meningitis had developed. All the patients had a high fever for eight to thirty-eight days, 8 had positive blood and 3 positive stool cultures. The patient with bacterial endocarditis had positive stool, urine and blood cultures. The composite clinical picture included chills and fever, coryza and pharyngitis, pneumonia, splenomegaly, abdominal pain, vomiting, diarrhea, arthritis, meningitis and bacterial endocarditis. If the bacteremia was uncomplicated the leukocyte count tended to remain low, but, once the infection localized, leukocytosis usually developed. The serum of most of the patients with S. suipestifer infection had high agglutination titers which persisted for a few months to six years after the infection subsided. Standard antigens and properly prepared antiserums should be used for identifying the various Salmonella organisms.

Furmethide.—Lipton and his associates observed the action of furmethide (furfuryl-trimethyl-ammonium iodide), given orally and subcutaneously, on the bladder of 12 normal subjects and on the atonic bladder of 3 patients after a one stage abdominoperitoneal resection for adenocarcinoma of the rectum. Its effect was to increase tone and restore atony to or toward normal. The drug effectively controlled the dysfunction of the bladder in the 3 patients. Although side reactions may be appreciable after large doses, it is possible to find an effective dose that does not cause significant disconcerning side effects, such as salivation, sweating, a feeling of warmth and a desire to void.

New Jersey Medical Society Journal, Trenton

39:57-128 (Feb.) 1942

Responsibility of Medical Profession Toward Political Institutions of Nation. W. P. Eagleton, Newark.—p. 68.
Amphetamine (Benzedrine) Sulfate and Thyroid Extract in Treatment of Obesity: Observations on Five Hundred Cases. S. W. Kalb, Newark.—p. 74.
*Simple Method of Timing Blood Coagulation. C. H. Knauer, Trenton. —p. 75.
Role of General Practitioner in Appendicitis. R. A. Schaaf, Newark. —p. 76.
Emotional Factor in Bronchial Asthma. J. A. Haiman, New York. —p. 80.
Relation of General Hospital to Psychiatry. J. B. Gordon, Marlboro. —p. 84.

Timing Blood Coagulation.—Knauer outlines a method for determining the coagulation time of the blood. He recommends the use of a hypodermic syringe with a slightly larger needle than is used ordinarily. Blood is withdrawn from a prominent vein, a few bubbles of air are drawn into the syringe, the syringe is laid on its side for three minutes and then it is tilted slowly from end to end so as to permit the bubbles with their interspaces of blood to travel slowly from one end to the other at intervals of fifteen seconds. It is soon observed that the rapidity with which the bubbles traverse the length of the syringe is decreased with the formation of the clot and that thirty to forty-five seconds transpires between the onset of clot formation and its completion. This is noticed by the almost complete immobility of the bubbles.

New Orleans Medical and Surgical Journal

94:361-410 (Feb.) 1942

Study of Effect of Combustion Products of Natural Gas on Public Health. H. G. Beck, Baltimore.—p. 361.
Myocardial Dysfunction Due to Vitamin B_1 (Thiamine Hydrochloride) Deficiency. A. Enstis, New Orleans.—p. 369.
Treatment of Arthritis. A. A. Herold, Shreveport, La.—p. 375.
Industrial Eye Injuries and Their Treatment. A. W. Martin, Bogalusa, La.—p. 381.
Milder Thyroid Deficiencies. E. Jones, Alexandria, La.—p. 384.
*Condylomata Acuminata. I. W. Kaplan, New Orleans.—p. 388.
Use of Enteric Coated Pills in Allergic States: Preliminary Report of Eighty-Two Cases. N. F. Thiberge, New Orleans.—p. 390.

Acuminate Condylomas.—Kaplan suggests the application of 25 per cent podophyllin in liquid petrolatum to all condylomatous masses. Six to eight hours after the application pain, which usually requires codeine sulfate or morphine for relief, is experienced. During the next twelve hours a decided local reaction, with inflammation and edema throughout the tissues near the site of application, ensues. On the second or the third day the condylomas begin to slough off and the pain ceases. On the fourth or fifth day the tissue returns to normal. No scarring is visible. A single application is usually sufficient. A weaker solution requires repeated applications, and the pain is almost as severe. In this manner the author cured 20 patients who had acuminate condylomas and venereal warts.

Ohio State Medical Journal, Columbus

38:101-200 (Feb.) 1942

Teaching Nutrition to People Who Take Their Noonday Meals Out. Alice H. Smith, Cleveland.—p. 117.
Primary Carcinoma of Gallbladder: Report of Two Cases. O. Berghausen, Cincinnati.—p. 125.
Treatment of Patient with Type No. 17 Pneumococcic Meningitis: Recovery. C. W. Kumpe, Hillsboro, and R. G. Cook, Camp Forrest, Tenn.—p. 128.
Pustular Psoriasis: Report of Case. B. P. Persky, Cleveland.—p. 130.
Congenital Dermoid Cysts of Nose. R. S. Rosedale, Canton.—p. 132.
Lymphogranuloma Inguinale. B. Seligman, Toledo.—p. 135.
Trichomonas Vaginalis Urethritis and Its Treatment. A. G. Sar-Louis, Cleveland.—p. 137.
Silicosis. M. B. Rusoff, Columbus.—p. 138.
Concurrent Tuberculosis and Pernicious Anemia. J. H. Skavlem and C. H. Storey, Cincinnati.—p. 142.
Gastrointestinal Allergy: Case Report. L. Sternberg, New York.—p. 145.
Poison Ivy Dermatitis. L. Goldman, Cincinnati.—p. 146.
Periarteritis Nodosa with Peripheral Polyneuritis and Hyperglycemia: Case Record Presenting Clinical Problems. R. R. Williams and Pearl Zeek, Cincinnati.—p. 148.

Oklahoma State Medical Assn. Jour., Oklahoma City

35:1-46 (Jan.) 1942

Relation of the Mental Hospital Physician to the Patient and His Relatives. J. L. Day, Supply.—p. 1.
Hemorrhoidectomy, with Special Reference to New Technic and Avoidance of Pain. E. Moore, Oklahoma City.—p. 4.
Present Day Conception of Convulsive Disorders. C. R. Rayburn, Norman.—p. 8.
Experience with Amebic Dysentery in Northeastern Oklahoma. G. K. Hemphill, Pawhuska.—p. 12.
Mastoiditis: Case History. F. Vieregg, Clinton.—p. 14.

Public Health Reports, Washington, D. C.

57:65-108 (Jan. 16) 1942

Distribution of Health Services in Structure of State Government: Chapter III. Tuberculosis Control by State Agencies. J. W. Mountin and Evelyn Flook.—p. 65.
Pigment of Malaria Parasite. D. B. Morrison and W. A. D. Anderson. —p. 90.

57:109-148 (Jan. 23) 1942

Isolation of Coccidioides from Soil and Rodents. C. W. Emmons. —p. 109.
Studies on Duration of Disabling Sickness: III. Duration of Disability from Sickness and Nonindustrial Injuries Among Male Employees of Oil Refining Company, with Particular Reference to the Older Worker, 1933 to 1939 Inclusive. W. M. Gafafer, Rosedith Sitgreaves and Elizabeth S. Frasier.—p. 112.
*Incidence of Cancer in Dallas and Fort Worth, Texas, and Surrounding Counties, 1938. A. J. McDowell.—p. 125.

57:149-188 (Jan. 30) 1942

Nutritional Deficiency and Infection: I. Influence of Riboflavin or Thiamine Deficiency on Fatal Experimental Pneumococcic Infection in White Mice. J. G. Wooley and W. H. Sebrell.—p. 149.
Role of Parasite Pigment in Malaria Paroxysm. D. B. Morrison and W. A. D. Anderson.—p. 161.

57:189-216 (Feb. 6) 1942

Nutrition Survey of Population Groups. Report of Conference on Methods and Procedures.—p. 189.
Present Status of Full Time Local Health Organization. F. W. Kratz. —p. 194.

Incidence of Cancer in Texas.—McDowell states that the total of 2,592 cases of cancer reported for Dallas County and the 1,091 for Tarrant County during a study year makes the rate for the prevalence of cancer among residents of this area 140 per hundred thousand, a rate higher than that in any of the five cities surveyed so far except Atlanta: 24 for Chicago, 25 for Pittsburgh, 37 for Detroit, 129 for New Orleans and 157 for Atlanta. The primary sites most often involved among males in the order of frequency were the skin, the buccal cavity, the digestive tract and the genitourinary system. Among women the order is the genitourinary system, the breasts, the skin and the digestive tract. There was a clear relationship between the primary site and the age of the patient. The percentage of cases of cancer of the prostate, the skin and, to a lesser extent, the digestive tract increased as age increased; malignant growths of the female breast and uterus and all respiratory cancers were most frequent in persons in the middle portion of the life span, while cancer of the brain, bones and "all other sites" was relatively more frequent in persons less than 35. At least 23 per cent of the patients died within one year of the diagnosis of their cancer, 60 per cent of those with cancer of the digestive tract and brain, only 3 per cent of those with cutaneous cancer and 10 per cent of those with malignant growths of the buccal cavity.

Rhode Island Medical Journal, Providence

25:1-22 (Jan.) 1942

General Introduction to Therapeutic Psychoanalysis. G. H. Alexander, Providence.—p. 1.
Toxemia of Pregnancy: Study of 273 Cases. W. S. Jones, Providence. —p. 8.

South Carolina Medical Assn. Journal, Florence

38:1-30 (Jan.) 1942

Some Historical Aspects of the Medical College of the State of South Carolina. R. Wilson, Charleston.—p. 1.
Recent Activities at Medical College. J. I. Waring, Charleston.—p. 4.
Cervical Arthritis. O. B. Chamberlain, Charleston.—p. 7.
Present Concept of Shock. E. F. Parker, Charleston.—p. 12.

Southern Medical Journal, Birmingham, Ala.

36:123-224 (Feb.) 1942. Partial Index

Rural Obstetrics: Report of Work on Frontier Nursing Service. J. H. Kooser, Hyden, Ky.—p. 123.
*Scarlet Fever Immunization: I. Evaluation of Some Methods of Immunization Over Fifteen Year Period. H. C. Graham, Tulsa, Okla.—p. 132.
*Meat Borne Typhoid Outbreak in Tennessee. P. H. Duff, Crossville, Tenn., and A. E. Hardison, Nashville, Tenn.—p. 139.
Hemolytic Streptococcus Infections in War Time. C. S. Keefer, Boston. —p. 143.
General Concept of Etiology of Functional Menstrual Disturbances. J. C. Burch and Doris Phelps, Nashville, Tenn.—p. 150.
Fractures of Astragalus. H. B. Boyd and R. A. Knight, Memphis, Tenn. —p. 160.
Carcinoma of Colon: Factors Influencing Prognosis. G. V. Brindley, Temple, Texas.—p. 171.
Venereal Disease Control in National Defense Program. G. R. Browntree, C. M. Fischbach and H. R. Leavell, Louisville, Ky.—p. 187.
Functional Dermatoses. G. V. Stryker, St. Louis.—p. 193.
*Milk, a Human Poison. M. T. Davidson, Birmingham, Ala.—p. 196.
Interpretation of Hypertensive Fundus. J. M. Baird and G. E. Clay, Atlanta, Ga.—p. 199.
*Sulfapyridine and Sulfathiazole Therapy in Lobar Pneumonia. W. H. Kelley, Charleston, S. C.—p. 203.
Chemotherapy of Pneumonia. T. J. Abernethy, Washington, D. C. —p. 210.
Lung Cysts. W. W. Anderson, Atlanta, Ga.—p. 216.

Scarlet Fever Immunization.—Graham evaluates some of the methods for immunization against scarlet fever. The intranasal, the oral, the inunction and the intradermal methods are inadequate. The intranasal method is inadequate unless rechecked by the Dick test every one to three years, and when the reaction again becomes positive additional antigenic stimulus must be administered until the Dick reaction is negative or protection may not be sufficient. The Dick subcutaneous injection method confers the most lasting immunity. When reactions follow it is likely that among the subjects who react there will be a higher percentage with a reversal to a positive reaction than among subjects with no reactions. With the Dick method the author has secured an 84 per cent immunity over a period of fifteen years. The test compares favorably with plain toxoid (78 per cent) but is probably inferior to the immunity obtained with two or three injections of alum precipitated toxoid. For general use the Dick method is superior to any other.

Meat Borne Typhoid Outbreak.—Duff and Hardison give an account of 7 cases of typhoid in Cumberland County, Tenn., with 2 deaths. Investigation suggested that the only common factor of epidemiologic significance for 4 of the patients was the food served for Thanksgiving dinner. The only food prepared outside the home was souse, or head cheese. This product was eaten also by 2 of the other patients. Study of the avenue of infection disclosed that the souse had been prepared by a white woman who had had typhoid in 1930 and who for several years afterward had had attacks of nausea, vomiting, abdominal discomfort and pains in the region of the gallbladder. Successive enteric cultures confirmed the suspicion that she was a typhoid carrier. The seventh patient in the outbreak had not eaten any of the souse, but since she had been in continuous contact with her daughter, who had known typhoid, it was assumed that the disease in her was secondary. Eberthella typhosa was isolated from the souse three months after its preparation.

Milk, a Human Poison.—Davidson studied the role that milk played in producing allergic symptoms among 100 patients at least 6 years of age whose manifestations (not due to seasonal pollens) justified complete testing and of 20 infants and children up to 4 years of age. Of the 100 patients 82 reacted to milk, 70 to egg, 39 to wheat, 50 to cottonseed, 95 to house dust and 90 to hairs; respectively symptoms were produced by these allergens in 40, 27, 8, 6, 51 and 9 per cent of the patients. Of the children 85 per cent reacted to milk, 63 to egg, 60 to wheat, 44 to cottonseed, 71 to house dust and 75 to hairs, and the allergens produced symptoms respectively in 55, 40, 40, 10, 45 and 10 per cent of the children. The symptoms complained of by the older group of patients were, in order of frequency, asthma, hay fever, urticaria, eczema, migraine, gastrointestinal upsets, conjunctivitis and acne; for the children they were asthma, eczema, hay fever and urticaria. The author believes that in any allergic syndrome of perennial occurrence there is a 40 per cent or better chance that milk plays a leading role in producing the symptoms.

Sulfapyridine and Sulfathiazole in Pneumonia.—Kelley used sulfapyridine for treating 213 and sulfathiazole for 100 patients with lobar pneumonia. In all 16, or 7.5 per cent, of the patients given sulfapyridine and 7, or 7 per cent, of those given sulfathiazole died. If the patients who died during the first day of treatment are omitted, the respective fatality rates become 5.1 and 3 per cent. As is usually found, the mortality rate was greater among patients past their youth and in those with bacteremia, extensive pulmonary consolidation or antecedent disability. The benefits from sulfapyridine and sulfathiazole were similar, although with the latter the concentrations of the free drug in the blood as a whole were greater and relief of the acute illness was generally more prompt. Nausea and vomiting were far more frequent when sulfapyridine was used. Certain patients with renal damage had dangerously high levels of the free drug in the blood after a relatively short period of treatment with sulfathiazole.

Southwestern Medicine, El Paso, Texas

26:1-32 (Jan.) 1942

March of Medicine. W. H. Woolston, Albuquerque, N. M.—p. 2.
Treatment of Heart Disease in Childhood. S. Gibson, Chicago.—p. 4.
Hypothyroidism. P. J. Connor and J. Maier, Denver.—p. 8.
Sterilization of the Unfit. W. M. Branch, El Paso, Texas.—p. 11.
Effect of Electromagnetic Radiations on Flocculation Tests for Syphilis. E. L. Breazeale, Tucson, Ariz.—p. 13.

Surgery, Gynecology and Obstetrics, Chicago

74:129-272 (Feb.) 1942

Experimental Study of Ureterointestinal Implantation: V. Destiny of Implanted Ureter. F. Hinman and H. M. Weyrauch, San Francisco. —p. 129.
Excision of Head of Pancreas for Carcinoma with Studies of Its Blood Supply. H. R. Ziegler, Rochester, N. Y.—p. 137.
Aseptic Resection of Stomach for Carcinoma and Ulcer. E. Holman, San Francisco.—p. 146.
*Human Bites of Hand. H. Miller and J. M. Winfield, Detroit.—p. 153.
Interscapulothoracic Amputation for Malignant Tumors of Upper Extremity: Report of Thirty-One Consecutive Cases. G. T. Pack, G. McNeer and B. L. Coley, New York.—p. 161.
*Treatment of Peritonitis: Intraperitoneal Use of Sulfonamides Based on Animal Experiments. C. H. Epps, E. B. Ley and R. M. Howard, Oklahoma City.—p. 176.
Retrocecal Appendix: Its Diagnosis and Surgical Approach. W. T. Harsha, Chicago.—p. 180.
Tonus of Uterus During Pregnancy and Its Relation to Labor: Study of 1,028 Observations Made with Lőrand Tocograph. D. P. Murphy, Philadelphia.—p. 182.
Functional Anatomy of Labor as Revealed by Frozen Sagittal Sections in Macacus Rhesus Monkey. D. N. Danforth, R. J. Graham and A. C. Ivy, Chicago.—p. 188.
Recurrent Fracture. W. A. Evans Jr., Detroit.—p. 204.
Implantation of Ureters into Rectosigmoid with Study of Postoperative Course. E. J. Poth, Baltimore.—p. 221.
Internal Wire Fixation for Fractures of Jaw: Preliminary Report. J. B. Brown and F. McDowell, St. Louis.—p. 227.
Reaction of Bone to Metals: II. Lack of Correlation with Electrical Potentials. R. T. Bothe and H. A. Davenport, Chicago.—p. 231.
*Management of Acute Embolic Occlusion of Arteries to Extremities. L. N. Atlas, Cleveland.—p. 236.
Gastrostomy: Jejunal Intubation. J. D. Bisgard, Omaha.—p. 239.
Multiple Myeloma. R. K. Ghormley, G. A. Pollock, B. E. Hall and L. H. Beizer, Rochester, Minn.—p. 242.
Surgical Anatomy of Superior Hypogastric Plexus: Report of 150 Personal Dissections. B. B. Weinstein, New Orleans.—p. 245.
So-Called "Iodine Resistant" Hyperthyroidism. J. E. Kearns Jr. and P. Starr, Chicago.—p. 256.
Hazards of Fire and Explosion of Anesthetic Agents: II. In Presence of Cautery. B. A. Greene, Brooklyn.—p. 259.

Human Bites of Hand.—Miller and Winfield state that injuries from human bites range from actual bites of the phalanges and hand to puncture wounds and lacerations produced by a fist striking exposed teeth. A more rare mechanism is that of sucking hangnails or the contamination with mouth organisms of a clean lacerated wound by a concerned bystander. Early infections due to human bites consist almost twice as often of lacerations of the fingers as of lacerations of the knuckles. In cases of late infection the reverse is true. The injury presented may be a simple cutaneous abrasion over the phalanges, knuckles or palmar surface of the hand or wrist, a complete avulsion of the cutaneous and subcutaneous segments and occasionally of the bone, a penetrating laceration either partially or

completely severing the extensor tendon or a wound which may have opened into the dorsal subcutaneous space, subtendinous bursa, dorsal subaponeurotic space or the joint cavity. The routine treatment employed is to wash gently the area about the wound with soap and water for five minutes and then the wound itself and then to irrigate the wound with saline solution for ten minutes. The wounds are not probed. After the mechanical cleansing and probably a limited débridement, wet dressings are applied. No attempt is made to repair the rent in the joint capsule. Hands are splinted in the position of function. Lacerations are never sutured, nor are injuries to deeper structures repaired. Patients return daily for examination, and if a joint is involved they are usually hospitalized. Sixty-one early infections from human bites of the hand have been given prophylactic treatment during the last three years. Fifty-five of the wounds remained clean, five became mildly inflamed and one became grossly infected. The average wound healing time was eight and five-tenths days. After-care consisted essentially of splinting and the application of continuous compresses of saline solution, boric acid or magnesium sulfate for forty-eight hours, when they were discontinued if the wound remained clean. Splinting was continued until healing was complete. The therapy of human bites seen late, which are already serious and sometimes extensively infected, should emphasize adequate surgical intervention and earlier and more radical drainage. The hand is thoroughly cleansed under general anesthesia, as much infected and gangrenous sloughing tissue is removed as possible and areas of infection are adequately drained. The deepest anatomic plane involved should be inspected. Infection of the joint, if adequately drained, need not result in an ankylosed joint; excellent function may be obtained. One should be slow to amputate extensively infected fingers, but extensive drainage of the soft parts is essential. Amputation should be avoided when acute infection is present. After the wound has been cleansed and debrided and drainage has been established it is loosely packed with petrolatum gauze, and massive wet antiseptic dressings are applied. The fingers, hand and arm are splinted in the position of function and arranged so as to favor drainage. Patients with such wounds should be hospitalized. Of the 54 patients with late infected injuries due to human bites, 13 remained with stiff fingers. Despite the severity of these infections, the average healing time was thirty-four days and the average hospitalization period was nine and four-tenths days. There were no fatalities. These infections are prone to recur and exacerbate frequently. There were 3 instances of recurrence among the 54 patients.

Treatment of Peritonitis.—Epps and Howard studied the effect of four sulfonamides on experimental appendical peritonitis, comparable to that in man, in 70 dogs. In a control group of 10 untreated dogs the mortality rate was 100 per cent. The therapeutic value of the local application of sulfabenamide, sulfanilamide, sulfapyridine sodium and sulfathiazole was determined. The results seem to indicate that subcutaneous or intraperitoneal administration is preferable to the intravenous route. This is explained by the relatively short action of sulfanilamide when given intravenously. Of the four drugs used intraperitoneally, sulfathiazole was the most effective, probably because part of the drug was given in suspension, allowing a longer time for action before absorption was complete. The number of dogs given one of the sulfonamides was small; however, the authors are certain that any one of the drugs may be administered intraperitoneally with safety and without deleterious effect to the peritoneum or intraperitoneal organs. The usual toxic manifestations must be anticipated and the patient treated accordingly if they arise. Sulfapyridine sodium has been used intraperitoneally in a 4 per cent solution for 10 patients at the Oklahoma University Hospitals. The results have been spectacular. When the drug was given only by the intraperitoneal route, serious toxic manifestations were not encountered.

Acute Embolic Occlusion of Arteries to Extremities.—According to Atlas, when an artery in an extremity is acutely obstructed by an embolus it is necessary to restore immediately sufficient circulation to the limb to preserve its viability and to promote therapeutically a collateral circulation, so that the functional capacity of the limb as well as its viability will be preserved. Both are accomplished by increasing the volume rate of blood flow through the available collateral circulation. Any method that augments the quantity of blood flowing through a collateral arterial network diminishes the peripheral resistance to blood flow through a dilatation of the arteriolar-capillary bed into which collateral vessels empty. Since ischemic tissue is saturated with vasodilating substances, such an increase in the flow of blood through collateral channels would automatically follow the acute occlusion of a principal artery. Often an effective collateral circulation develops without therapeutic assistance. There would be many more such instances if it were not for the fact that, when an embolus suddenly occludes a peripheral artery, the arterial bed in that extremity, and sometimes in the opposite extremity, is thrown into a greater or lesser degree of spasm. An embolus lodged in the distal portion of an extremity may reflexly render the more proximal and larger arteries pulseless. Unless spasm is considered, these larger spastic vessels may be surgically explored for the purpose of removing what is erroneously considered to be the offending embolus. When the collateral circulation in an extremity rendered acutely ischemic is so spastic that vasodilating substances surrounding it do not relax it, the use of heat as an additional dilating stimulus is not only illogical but dangerous. During the acute stage of an embolic occlusion, treatment should be concerned with relaxing spastic vessels and preventing their thrombosis. To secure relaxation the intravenous injection of 0.032 Gm. of papaverine hydrochloride every four hours for forty-eight hours and then three times a day for a week is almost specific. Heparin is administered to prevent thrombosis; 50 mg. is given intravenously every four hours. The limb is then swathed in cotton and protected with an unlighted cradle. After the spasm disappears, measures may be instituted to stimulate further the flow of blood through collateral channels. Local application of mild heat, rhythmic venous occlusion and suction pressure may be employed. Should the ischemia fail to improve or progress despite treatment, organic block of a major vessel must be considered and embolectomy performed. Persons who have sustained an embolic occlusion may present themselves several weeks after the accident. In them a periarteritis often involves the thrombosed vessel and stimulates afferent sympathetic neurons with resultant pain or reflex spasm of the collateral bed. The offending thrombosed arterial segment should be resected.

Virginia Medical Monthly, Richmond

69:1-56 (Jan.) 1942

Public Health in Virginia. I. C. Riggin, Richmond.—p. 2.
Management of Chronic Suppurative Pulmonary Disease. P. P. Vinson, Richmond.—p. 7.
Nephrectomy, with Comments on Diagnostic Procedures in Obscure Conditions. T. J. Hughes, Roanoke.—p. 14.
Uterine Contractions in Labor: Effect of Analgesic Drugs. W. Bickers, Richmond.—p. 15.
Hormonologic Consideration of Functional Dysmenorrhea. R. L. Pullen and E. C. Hamblen, Durham, N. C.—p. 19.
The Airplane, Possible Means of Transmission of Disease. W. P. Jackson, Norfolk.—p. 29.
Diabetes Insipidus Following Encephalitis. W. R. Jordan and W. R. Graham, Richmond.—p. 35.
Use of Heat in General Practice. B. Boynton, Norfolk.—p. 37.
Nasal Myiasis Due to Bot Fly Larva (Cuterebra sp.): Report of Case. R. G. Beachley, Arlington, and F. C. Bishopp, Washington, D. C.—p. 41.
Infectious Diseases as Cause of Diabetes Insipidus. H. A. Hoffman, Washington, D. C.—p. 42.

Yale Journal of Biology and Medicine, New Haven

14:229-332 (Jan.) 1942

Lipotropic Substances. Elizabeth G. Frame, New Haven, Conn.—p. 229.
Necrosis of Renal Pelvis Associated with Obstruction of Ureters. R. Katzenstein and M. C. Winternitz, New Haven, Conn.—p. 257.
Studies on Relation of Kidney to Cardiovascular Disease: V. Lesions of Myocardium. S. H. Durlacher and M. C. Winternitz, New Haven, Conn.—p. 269.
Social Implications of Medical Science. J. P. Peters, New Haven, Conn.—p. 279.
Strabismus in New Haven Dispensary. C. C. Clarke, New Haven, Conn.—p. 291.
Bacteria and Formed Elements in Urine in Normal Pregnancy. J. W. Hirshfeld, D. C. Leary and W. R. Foote, New Haven, Conn.—p. 297.
Some Physician Friends of Joseph Farington, R. A. G. H. Smith, New Haven, Conn.—p. 307.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

54:1-38 (Jan.) 1942

Hydrogen Ion Concentration in Therapeutic Bases. R. G. Harry.—p. 1.
Chemicals in Fabrics as Potential Skin Irritants. H. E. Cox.—p. 22.

British Journal of Radiology, London

15:1-32 (Jan.) 1942

Radiologic Aspect of Gastritis. F. R. Berridge.—p. 1.
Effect of Ionizing Radiations on Broad Bean Root. L. H. Gray and J. Read.—p. 11.
Gastrocopic Appearances in Gastritis. J. F. Dow.—p. 17.
Effect of Bone Absorption of Delivered X-Radiation and Its Relation to Predetermined Pelvic Dosage Schemes. B. Sandler.—p. 20.
Direct Reading Instrument for Measurement of Ionization Currents in Gamma Ray Therapy. W. A. Langmead.—p. 27.

British Medical Journal, London

2:897-932 (Dec. 27) 1941

"Growth" and Diabetogenic Action of Anterior Pituitary Preparations. F. G. Young.—p. 897.
*Treatment of Pulmonary Tuberculosis by Thoracoplasty. F. R. Edwards, G. Leggat and H. M. Davies.—p. 901.
Improved Method of Regional Anesthesia in Acute Abdominal Surgery. N. R. James and H. W. Burge.—p. 906.
Trichiniasis in Birmingham. L. J. Bacon.—p. 909.

Thoracoplasty for Pulmonary Tuberculosis.—Edwards and his collaborators adhered to the following indications in the treatment of 59 patients between 1933 and 1940: The disease must be unilateral and the lesion fibrotic, pneumothorax must have failed and the age of the patient should be between 15 and 45 and his general condition good. Of the patients 52 had parenchymatous disease and 7 had tuberculous empyema. A total of one hundred and fifty-eight thoracoplasties were performed, and a follow-up study in May 1941 showed that 35 patients (68 per cent) were fit and well and 30 of them able to work. Nine patients are still unfit or have a positive sputum, and 8 have died. Of these 52 patients 40 were considered "good risks" (30 of whom are fit and well and have a negative sputum) for thoracoplasty and 12 "justifiable risks." Of the 7 patients with tuberculous empyema 5 have died and 2 are not fit; 1 needs a plastic operation and 1 is losing weight. Operation undertaken on such patients before the general effects of the toxemia become too definite and the pleural membranes too thickened would undoubtedly result in more satisfactory results. The authors declare that from the public health point of view no person with a positive sputum should be at large in the community. A ten rib paravertebral thoracoplasty with removal of the transverse processes is the procedure of choice.

Lancet, London

2:783-816 (Dec. 27) 1941

Bacterial Contamination of Cerebrospinal Fluid. W. Smith and Muriel M. Smith.—p. 783.
Treatment of Air Raid Casualties. J. A. Shepherd.—p. 785.
*Vitamin A and Dark Adaptation: Effect of Alcohol, Benzedrine and Vitamin C. S. Yudkin.—p. 787.
Significance of Intelligence in Skin Cases. G. A. Hodgson.—p. 791.
Macrocytic Anemia in Pregnant Women on Gold Coast. Beatrice A. S. Russell.—p. 792.
Serum Calcium and Inorganic Phosphorus in Parathyroid Tetany: Their Bearing on Treatment. J. D. Robertson.—p. 795.
Resection of Head of Pancreas and Duodenum for Carcinoma. R. Maingot.—p. 798.

Vitamin A and Dark Adaptation.—Yudkin studied the effect on dark adaptation of giving 100,000 international units of vitamin A on an empty stomach to 24 patients. Food was taken after three hours. The dark adaptation was measured after one, four, seven, ten and twenty-four hours. The results varied, but usually an improvement in dark adaptation began in about two hours and was maximal in eight to ten hours. Within twenty-four hours the curve had usually returned to the original low state. A few patients did not have hemeralopia again for several days or even weeks. The final rod threshold, the final cone threshold and the rod-cone transition time all were usually affected. There would be no effect in an extremely deficient subject until several doses of 100,000 international units were given, and then the reaction was transitory. After a few more doses the usual improvement and relapse would ensue. After still more doses the hemeralopic patient would not return for three or four days, after which a much smaller dose produced a result. The response to further large single doses lasted for weeks or even months. The author believes that the best way to decide whether a person's night blindness is due to a deficiency of vitamin A is that suggested by Steven and Wald, or the determination of "threshold lability," i. e. the fall from a high to a significantly lower final rod threshold after about ten large doses of vitamin A. The appearance of vitamin A in the blood four to five hours after any dose will show that the vitamin is being absorbed. Night blindness due to vitamin A deficiency will almost certainly improve after two large doses, but if no response occurs it may be assumed that the night blindness is not due to a deficiency of vitamin A. The value of giving 500 mg. of vitamin C for ten days, as suggested by Stewart and by Kimble and Gordon, was studied on 6 patients with poor dark adaptation. No improvement was observed, whereas the adaptation of all of them became normal after treatment with vitamin A. Yudkin concludes that vitamin A may not be the only factor affecting the complicated process of dark adaptation; any link in the chain may be affected: oxygen, hypoglycemia, amphetamine sulfate and alcohol may all affect dark adaptation; the latter two cause improvement and the former two deterioration. Congenital and hereditary night blindness and certain retinal diseases affect dark adaptation independently of the adequacy of vitamin A. Even when hemeralopia is cured with vitamin A it is not known which part of the metabolic cycle was at fault.

1:1-30 (Jan. 3) 1942

Natural History of Bright's Disease: Clinical, Histologic and Experimental Observations. A. Ellis.—p. 1.
Zinc Peroxide Preparations, with Notes on Clinical Uses. C. Hoyle, J. W. Spence and S. H. Faulkner.—p. 7.
*Recovery from Granulocytosis After Rigor During Transfusion. R. M. Cross.—p. 9.
Anthrax Septicemia: Fatal Case. A. G. M. Severn.—p. 9.

Recovery from Granulocytopenia After Rigor During Transfusion.—Cross reports that an airman aged 20, who was inoculated on Aug. 18, 1941 with T. A. B. and ATT [antitetanus toxoid?], had pyrexia with a severe local reaction on August 19 and during the next ten days was given 42 Gm. of sulfapyridine by mouth. By this time he complained of tenderness of the lower gums and stiffness of the nuchal muscles, and the tonsillar glands were enlarged. The leukocyte count was 2,500 per cubic millimeter, and the granular leukocytes were absent. He was given intramuscular injections of 10 cc. of pentnucleotide twice a day for seven days. After 500 cc. of blood of group 0 had been given on September 1 the total leukocyte count increased to 3,500 and the neutrophils numbered 3 per cent. By this time the lower gums and cheek were ulcerated, the tonsillar glands were enlarged and painful and there was intermittent pyrexia, the temperature rising to about 100.2 F. After pentnucleotide had been given for two more days the total leukocyte count increased to 5,000, with 6 per cent neutrophils. A second transfusion was given on September 4 and the leukocyte count increased to 8,000, with 13 per cent neutrophils. Tenderness of the glands decreased, and the patient felt much better. A third transfusion was started on September 8 but had to be discontinued because the patient had a severe rigor lasting about fifteen minutes. Blood films taken immediately after the rigor showed a slight increase in the total leukocyte count and in the percentage of neutrophils. Four hours after the rigor, the temperature rose to 105.6 F. and the total leukocyte count was 40,000, with 85 per cent immature neutrophils. Next morning the temperature was normal, and in two days the ulceration of the gums was completely healed. During the next four days the total leukocyte count and the percentage of neutrophils gradually returned to normal and the cells appeared progressively more mature. The patient was discharged from the hospital on October 8, fully recovered. There was no question of transfusion of incompatible blood; so the cause of the pyrexia remains a mystery. Nevertheless it effectively aborted the granulocytopenia and suggests that artificial but controlled pyrexia, if used with caution, might be useful in aborting such attacks.

Schweizerische medizinische Wochenschrift, Basel

71:1437-1464 (Nov. 15) 1941. **Partial Index**

Pregnancy Reaction According to Aschheim-Zondek and Its Modifications. E. Held.—p. 1437.
Aseptic Necroses. R. Meyer-Wildisen.—p. 1442.
Experimental Research on Nephritis and Its Significance for Clinical Aspects of Renal Diseases. M. Gukelberger.—p. 1445.
Etiology of Meralgia Paraesthetica. W. Jost.—p. 1448.
*Estimation of Patients with Heart Disease by Military Physician. W. Hadorn.—p. 1449.
*Estimation of Rheumatic Disorders in Military Service. V. Heinemann. —p. 1454.

Heart Disease and Military Physician.—Hadorn maintains that anatomic defects of the heart may result from functional disturbances. The assumption of spastic-functional-ischemic-necrotic processes is entirely justified. Neurocardiac disturbances may develop into myocardial lesions without an intercurrent infection. One should pay attention to all the complaints of soldiers which refer to the cardiovascular system. The early symptoms of circulatory disturbances are nearly always subjective. The patients complain of palpitation, sweats, fatigue, dyspnea, insomnia, weakness, fainting and darting heart pains. Specific information should be sought as to the type of dyspnea. Pain in the cardiac region must be investigated. Formerly substernal pain was regarded as of organic origin, a symptom of ambulatory angina pectoris, whereas pain in the region of the cardiac apex was considered nervous or neurotic. Electrocardiographic records revealed that darting pains in the region of the heart may be of coronary or myocardial origin. Certain symptoms and minor alterations in signs, which were formerly overestimated and regarded as sufficient for rejection, are of no importance. Moderate palpitation is not significant. Palpitation and tachycardia are not identical; tachycardia by itself is of no particular importance. Respiratory arrhythmia and occasional extrasystole, if occurring alone, likewise do not establish the presence of heart disease. Although extrasystoles are no longer considered as "harmless mischief of the heart" (Wenckebach), the monotopic ones are of no particular importance when heart and circulation are otherwise normal. Electrocardiography reveals whether the extrasystoles are monotopic or polytopic. If extrasystoles appear immediately after exertion they are not harmless. Extrasystoles can be brought on by the use of nicotine, chronic constipation, meteorism and an elevated diaphragm. Every extrasystole demands a search for foci of infection. Auricular extrasystoles must be estimated differently from the ventricular ones, because they may become frequent and lead to paroxysmal tachycardia and auricular fibrillation. Paroxysmal tachycardias which appear only at great intervals do not render one unfit for military service. Systolic murmurs, formerly regarded as identical with mitral insufficiency, are generally of little importance. Attention must be given to a history of infections, articular rheumatism, chorea minor, diphtheria, syphilis, tonsillitis and infection of the teeth and sinuses. Coronary complaints should be taken seriously at any age. Objective examination by the military physician includes examination of the pulse, inspection, palpation and percussion of the cardiac region, roentgen examination and electrocardiography. Electrocardiography is most important. The simple test of holding the breath may be employed to determine the work capacity of the heart. Observations on the pulse frequency, blood pressure and respiratory rate before and after a certain exertion constitute the functional examination. Other tests mentioned are the "getting up reaction," the hepatic pressure test of Plesch, Volhard's test, the separate measurement of the day and night urines, the examination of the urine for urobilinogen, the roentgenologic examination of the lung for stasis, probatory strophanthin injection according to Fraenkel and the exertion electrocardiogram.

Rheumatic Disorders in Military Service.—According to Heinemann the incidence of rheumatism in the army has increased since the onset of the war, since older men have been called for prolonged service. The exertions and exposure of military service are contributing causes. A number of etiologic factors determine the variable symptoms of rheumatism. The control and supervision of rheumatic disease should be in the hands of physicians with special training and experience in rheumatism, so that suitable measures may be instituted early, patients with hopeless disease discharged and unnecessary dismissals avoided. Antipyretics, salicylic acid and choline derivatives have proved effective in the treatment of rheumatic disorders. Aminopyrine proved particularly effective in chronic rheumatic disease. Sulfur normalizes the impaired blood perfusion of the skin. A catalytic activation of the mesenchyma with stimulation of its phagocytic activity is ascribed to the colloidal gold preparations. It has not been determined to what extent sulfonamide derivatives influence the course of rheumatism, but their use is indicated whenever infectious foci are found. Exercise should begin early, but during the acute stage rest should not be interrupted by gymnastics and massage, particularly in the presence of inflammatory articular exudates. Gymnastics and massage should be carried out only by well trained persons. Too little attention is given to the necessity of a lactovegetable diet. Static defects are often contributory causes in rheumatism, and they should be corrected by orthopedic treatment. Spread, sag and flat feet are the chief orthopedic defects that cause changes in the neighboring joints. Some complaints referable to the hip joint in soldiers are the result of an anlage to coxa vara. Men with static dynamic difficulties due to defects of the vertebral column can be kept in army service by transferring them to a unit requiring less physical exertion. The author regards the removal of suspected infectious foci advisable in spite of the realization of the plurality of causal factors of rheumatism.

Día Médico, Buenos Aires

14:17-32 (Jan. 12) 1942. **Partial Index**

*"Pseudocholangiopathic" Form of Coronary Thrombosis. P. A. Tapella. —p. 24.
*Substitutes for Blood Transfusion. A. Battaglia.—p. 28.

"Pseudocholangiopathic" Form of Coronary Thrombosis.—Tapella reports 3 cases of typical acute coronary thrombosis associated with jaundice. The clinical diagnosis was confirmed by electrocardiograms. Jaundice appeared within twenty-four hours of the attack. It lasted for about ten days and disappeared in the next three or four days. Symptoms of disease of the liver, the gallbladder or the bile ducts were not present either before or after the coronary accident, although the patients were observed for two to four years after the attack. The gallbladder and bile ducts were normal when observed cholangiographically. The author believes that in this type of coronary thrombosis jaundice is due to a reflex which originates in the lower cardiac nerve, reaches the zone of confluence of the nerve with the great splanchnic nerve at the paravertebral sympathetic ganglions and stimulates the bile ducts through the great splanchnic nerve. The name pseudocholangiopathic coronary thrombosis is suggested for this type of attack.

Substitutes for Blood Transfusion.—According to Battaglia the so-called blood substitutes or artificial serums are of value only in emergency, when blood plasma or blood serum cannot be obtained. The order of value of blood substitutes in acute hemorrhage is as follows: blood plasma, blood serum, Ringer-hemoglobin solution, isotonic solution of sodium chloride with acacia, erythrocytes suspended in crystalloid solutions, isotonic sodium chloride solution and isotonic dextrose solution. The therapeutic effects of blood plasma are as good as those of blood serum. Liquid plasma can be preserved only for a few weeks, after which there is danger of precipitation of fibrinogen. Plasma diluted in isotonic solution of sodium chloride up to approximately the primary volume of total blood can be preserved without precipitation for a long time. Desiccated blood serum and plasma can be kept indefinitely and used in various concentrations according to proper indications. The use of blood serum and plasma for transfusion does not involve blood group testing. These substances do not cause unpleasant reactions. When large doses are transfused it is advisable to use blood serum or plasma from donors of corresponding blood groups. Artificial serums may be used as substitutes for blood transfusion only when compatible blood, blood serum or plasma is not available. Transfusion with blood serum or plasma is mainly indicated in shock of any origin, acute burns, acute hemorrhage, hypoproteinemia, certain forms of nephrosis and intracranial hypertension.

Book Notices

Youth and the Future. The General Report of the American Youth Commission. Cloth. Price, $2.50. Pp. 296. Washington, D. C.: American Council on Education, 1942.

The American Youth Commission, which has heretofore published brief statements and pamphlets and has previously dealt with segments of the youth problem in book publications, now issues this general report, in which various phases of youth problems in depression, in prewar days and in war time are considered. The book has an explanatory foreword and introduction by Owen D. Young, chairman of the commission, and four principal parts. Part I contains five chapters dealing respectively with youth unemployment as a continuing problem, experience with youth work programs, work programs for youth in the future, relations between schools and youth work programs, and the problem of full employment. In part II are eight chapters touching on various phases of the basic problems of youth, such as general needs, education, occupational adjustment, the use of leisure time, marriage and the home, health and fitness, delinquency and youthful crime, and education for citizenship. In part III are four chapters dealing with the different aspects of responsibility for action for youth as they arise in communities, in state governments, in the federal government and in the relationships of public and private agencies related to planning and action for youth and by youth. Part IV has one concluding chapter entitled "Meaning for Life."

The book is a broad, comprehensive, sincere, inspiring and compelling study. Its conclusions are far reaching and far seeing. A real effort has been made to see the problem as a whole, regarding youth as one segment of our population, but a segment of tremendous potential importance, both for the present, the immediate future and the far distant horizons of national destiny. It is not to be expected that every reader will agree with the conclusions in the report, but every honest reader must admire the courage and respect the sincerity of the conclusions reached and those who reached them.

The medical profession is most concerned with those aspects of the report dealing with health and fitness. These are dealt with primarily in chapter 11 but are not overlooked elsewhere, as indicated by numerous subsidiary references to health and fitness in connection with other phases of the youth program. The report calls for greater attention to the health of youth, even though youth is essentially a healthful time of life, comparatively speaking. Youth, nevertheless, has definite problems, of which the four principal ones are listed as tuberculosis, the venereal diseases, appendicitis and rheumatic heart disease. The emotional and personality problems of youth are dealt with at considerable length, not only in this chapter but in others, with appropriate emphasis on the fundamental need of man at any age, namely emotional security and a sense of being needed. One could differ with details in the proposals of the commission, but one can hardly differ with its fundamental premises. For instance, one might be inclined to question the efficacy of a youth health program beginning with a physical examination at the age of 18, especially since dental defects, which are admittedly the leading deviation from normal in our nation, are probably determined in utero or immediately after birth.

The demand of the commission for something rather immediate in the way of health insurance systems, with the implication that nothing along this line has been done, could be questioned in the light of the widespread prevalence of hospital insurance plans and the experiments by medical societies and other agencies in attempting to arrive at a formula for delivering medical service to all the people at a price which the people can pay. Yet in the main the commission stands for those things for which the medical profession has stood; namely, free choice of physician and cash benefits.

100 Years of Medicine in Minnesota. Boards. Pp. 26, with illustrations. St. Paul: Minnesota State Medical Association, 1941.

The Minnesota State Medical Association, in celebrating the hundredth anniversary of the arrival in what is now the state of Minnesota of the first civilian practitioner of medicine, sent to community leaders and institutions a copy of this interesting booklet. The progress of medicine in Minnesota from the time Dr. Christopher Carli arrived at what is now Stillwater on May 24, 1841 is shown in pictures. Only twelve years later most of the twenty hardy doctors in the territory met in St. Paul to form the Minnesota Medical Society, the forerunner of the present state medical association, which has nearly three thousand members in thirty-four component county and district societies covering every section of the state. Close cooperation between the private practitioners and the Minnesota State Board of Health during these hundred years practically eradicated many of the diseases that scourged this territory. Today Minnesota is said to lead in the control of tuberculosis and syphilis and in the saving of mothers and babies. In 1841 more than half of the babies died before they were 5 years old and three fourths of the people died before they were 40. Today only 8.2 per cent of the babies die under the age of 5, and more than half of the deaths are delayed until after 60. Children as well as adults will be much interested in this pictorial history. The editorial material found here and there among the pictures will also appeal to practically all ages, and it is simply stated and very clear.

The March of Medicine. The New York Academy of Medicine Lectures to the Laity [Number VI]. 1941. Cloth. Price, $2. Pp. 134, with 3 illustrations. New York: Columbia University Press, 1941.

This collection of essays represents the sixth set of a series of lectures to the public at the New York Academy of Medicine. It is the third volume to bear this title, the other two having been published in 1939 and 1940. Since the purpose of the lectures is to show historically how medicine has developed and to present its social and cultural significance, each lecture should interest the physician and the layman and should be written in terminology requiring no special knowledge of medicine or the allied sciences. As in the past, the writers on the whole have pursued this goal with some success. After a terse foreword by Dr. Malcolm Goodridge, and a philosophic introduction by Dr. Haven Emerson, the collection presents articles entitled on humanism and science, by Dr. Alan Gregg, Paracelsus in the light of four hundred years, by Dr. Henry E. Sigerist, psychiatry and the normal life, by Dr. William Healy, philosophy as therapy, by Irwin Edman, Ph.D., the promise of endocrinology, by Oscar Riddle, Ph.D., and what we know about cancer, by Dr. Francis Carter Wood. A fairly adequate index completes the collection and is a somewhat unique feature for a book of this type. Although the essays are designed primarily for the layman, it is probable that only a select group will obtain the utmost from them, as the authors occasionally become too philosophic to maintain the interest of the average man in the street. Readers who have had more than the usual training in the various sciences should enjoy the book. As Haven Emerson said in his introduction, "Glamor and romance there is in abundance in medicine for student, practitioner and patient." The articles in this volume aid materially in stressing this fundamental truth.

Stitt's Diagnosis, Prevention and Treatment of Tropical Diseases. By Richard P. Strong, Consultant in Tropical Medicine to the Massachusetts General Hospital and the Boston City Hospital, Boston. In Two Volumes. Sixth edition. Fabrikoid. Price, $21 per set. Pp. 871, with 197 illustrations; 872-1747, with 201 illustrations. Philadelphia: Blakiston Company, 1942.

Dr. Strong has taken over from Admiral Stitt, U. S. Navy, retired, the authorship of this work. While this is said to be a revision of Admiral Stitt's book, it is in fact a new work, much more comprehensive than its predecessor, largely rewritten and made also a book of reference to recent research. The comprehensiveness of the work is indicated in the opening chapter on malaria, which in itself comprises one hundred and thirty-five pages, not counting a second chapter of some twenty-eight pages on blackwater fever. Knowledge of tropical diseases has increased much in recent years, and that too accounts in part for the increase in the size of the publication. The illustrations in some chapters are adequate. A helpful part is the appendix. In an index of clinical diagnosis are pointed out the diseases in which the symptoms associated with tropical diseases may arise. The second chapter of the appendix concerns laboratory procedures used in diagnosis; for example, under amebiasis the author advises one to examine the feces for cysts and trophozoites; also that amebiasis may show monocytosis, and that one should differentiate from bacillary dysentery and chronic non-

specific ulcerative colitis. The third section of the appendix, on tropical hygiene, discusses the effects of sunlight, altitude, storms, atmospheric pressure, heat, humidity, mountain climates, the effects of heat on the white and brown races, acclimatization and colonization; and this is followed by a discussion of the clothing, tropical housing, vaccinations that one should have on going to tropical climates, equipment, diet, infant feeding, beverages, water purification, sewage disposal and insects. Dr. Strong is eminently fitted to take up this work. He has served in various capacities in many tropical countries and now is a consultant to the Secretary of War on tropical medicine and a professor of tropical medicine emeritus at Harvard University. This work will take its rightful place among the great works on tropical medicine.

Clinical Roentgenology of Pregnancy. By William Snow, M.D., Director of Radiology, Bronx Hospital, New York. Cloth. Price, $4.50. Pp. 178, with 119 illustrations. Springfield, Ill., and Baltimore: Charles C. Thomas, Publisher, 1942.

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Hypertension in chronic glomerulonephritis does not require treatment nor is it particularly responsive to the measures ordinarily employed in essential hypertension. However, the complications of hypertension in the form of encephalopathy and cardiac insufficiency can be treated in nephritic patients as in others. Low renal function renders the use of hypertonic solutions of sucrose, intravenously, questionable because of delayed excretion and noneffectiveness. Sedatives like bromides and barbital which depend on urinary excretion should be given with caution, if at all.

POLYNEURITIS IN A WATCHMAKER

To the Editor:—A man aged 28, who had been working in a watch factory for the past several years, suddenly became ill, complaining of severe pain in one arm and then the other, and later of pain in the abdomen and legs. His temperature varied between 100 and 104 F. Later he had a bilateral wrist drop and wasting of the upper extremity. He was admitted to the hospital, where he remained for eight weeks before he died. Several diagnoses were made, such as polyneuritis, poliomyelitis and meningitis. A postmortem was performed and a diagnosis of infectious polyneuritis was made. While working in the watch factory the man came in contact with a solution of dilute cyanide, cream of tartar, alcohol and acetic acid, nickel chloride and nickel sulfate, copper cyanide, gold cyanide, silver chloride and silver cyanide. Is it not possible that the patient acquired polyneuritis as a result of his occupation, which through lowered resistance on account of his long illness became an infectious type and hastened his death? Are there such cases on record? Kindly send me reference material or advise where I can obtain this material.

William A. Lustusky, M.D., Mount Carmel, Pa.

ANSWER.—The preeminent but still minor occupational diseases of the watchmaker center about a variety of dyskinesias or cramps or trade neuroses akin to the better known "writers' cramp." These result from repetitive movements in manipulating small parts, usually metal, in watch parts production and assembly. To some extent the damage may be functional, but the possibility that a neuritis exists is recognized. While work disability may arise, such disability is limited to special operations and by no means is general. So localized are such injuries that it is only fabulous to conceive that such affairs might attain the severity described in this query. Of greater significance is the implication found in the query that this former workman was not a watchmaker but a plater and thus not subject to the dyskinesias mentioned. The question then becomes Will the plating materials mentioned lead to a fatal polyneuritis? The answer must be made in the negative, and no such occurrences are found in authentic literature. Gold, silver, nickel and copper are not recognized as likely sources of systemic diseases after industrial exposures. Cyanides are highly toxic but do not induce the manifestations of the acute episode described. Cyanide gases constitute internal asphyxiants but are without selective action for peripheral nerve tissues. The well elevated temperature at onset militates in some measure against any chemical action. The concept that the wear and tear of work lowered resistance might apply equally to large numbers of occupations and is scarcely tenable.

PITYRIASIS RUBRA PILARIS

To the Editor:—In a girl aged 13 there developed five months ago hard dry papules on the dorsal and ventral surfaces of the feet and hands. Within a few weeks the eruption became universal, with some sparing of the flexor surfaces of her arms. In most areas the papules have become confluent; the entire back and face are one dry red plaque partially covered with branny scales. The scalp presents a picture of moderately severe seborrheic dermatitis, "dandruff," with much scaling and some loss of hair. The nails are striated and the palms and soles are thickened. The patient is somewhat underweight, has not reached puberty but otherwise is in fair health, except that a few days ago mild bronchopneumonia developed. A dermatologist prescribed large doses of vitamin A and various external methods of treatment, including tar baths, frequent oil rubs and sulfur ointment. There has been a moderate amount of itching present since inception of the condition. This is apparently a case of pityriasis rubra pilaris. Please answer the following questions: Could this be a manifestation of a dermatosis due to a vitamin A deficiency, assuming that the girl comes from a well-to-do family and has had sufficient amounts of vegetables and dairy products in her daily diet? What is the cause of pityriasis rubra pilaris? Could there be a hormonal dysfunction, that is of the thyroid? What would you advise as to internal and external therapy?

Eugene J. Boros, M.D., Bethany, Ill.

ANSWER.—This is undoubtedly a case of pityriasis rubra pilaris. In recent years a disease of the skin has been reported in which follicular hyperkeratosis, the same pathologic appearance seen in pityriasis rubra pilaris, is present to a less degree. Numerous writers have described a condition in undernourished patients in the tropics and in the Orient in which a rough skin with follicular hyperkeratosis (phrynoderma, meaning toadskin) was associated with well established signs of vitamin A deficiency, such as xerophthalmia, keratomalacia and night blindness. More recently a similar disorder has been described as affecting white persons, children and adults, and under appropriate therapy the skin has been restored to normal. This condition usually affected persons of the underprivileged class or those who for some reason had undergone a rigid restriction of the diet. It seems well established on the basis of these reports and experiments that under certain conditions a deficiency of vitamin A provokes a characteristic response in the skin.

Microscopic studies made in cases of phrynoderma show a striking similarity in many respects to the microscopic picture of pityriasis rubra pilaris. In 3 cases of pityriasis rubra pilaris reported by Brunsting and Sheard (Dark Adaptation in Pityriasis Rubra Pilaris, *Arch. Dermat. & Syph.* **43**:42 [Jan.] 1941) the abnormally high levels of dark adaptation present were corrected promptly by the administration of large amounts of vitamin A. The response of the skin, however, was considerably delayed. Failure in response or a delayed response of the skin to a therapeutic test by means of the administration of large amounts of carotene or of vitamin A is only of relative value in determining the ultimate importance of a disturbance of vitamin metabolism in this peculiar disease entity.

In an article by Peck, Chargin and Sabotka (Keratosis Follicularis, a Vitamin A Deficiency Disease, *ibid.* **43**:223 [Feb.] 1941) the authors state that patients with keratosis follicularis when given a normal diet, which apparently contains an adequate amount of vitamin A, are unable to maintain a normal vitamin A level in the blood because of either inability to absorb the required quantity of vitamin A from the gastrointestinal tract or inability to convert the provitamin A, carotene, into vitamin A. This will explain the reason for giving vitamin A in pityriasis rubra pilaris. The reference may explain why a girl on a normal diet should show a vitamin A deficiency.

The cause of the disease is unknown. It is a chronic benign process in the skin, runs a varied course and may show a familial trend. There is no evidence to show that there is a hormonal dysfunction of the thyroid. The treatment outlined by the dermatologist is excellent and should be continued.

BLEEDING FROM MUCOUS MEMBRANES CAUSED BY HEPARIN

To the Editor:—Have cases been reported in which heparin has caused bleeding from the mucous membranes, namely the gums and the bowel? The following case was observed in our hospital: A woman aged 74 with hypertension and an apparently sound heart was operated on for partial intestinal obstruction and an enlarged, thickened gallbladder with a solitary stone. The stone was removed, and drainage of the gallbladder was instituted; distention, nausea, vomiting and constipation followed. About the fifth day, after the use of enemas and the Wangensteen suction apparatus, she was doing well, when thrombosis of the popliteal artery occurred. It was decided not to intervene. After the second day one ampule of heparin was administered in 500 cc. of dextrose solution. The clotting time was eight minutes after administration. The next day, a second ampule was given and the clotting time was five and one-half minutes. Twenty-four hours later two ampules were administered in 500 cc. of dextrose solution and the clotting time was over ten minutes. This was followed by bleeding from the gums and the bowel which lasted over twelve hours. The heparin seemingly had no effect on the condition of the leg, which gradually became more cyanotic, and the circulation became more impaired. The patient lived four or five days more before death, the heparin apparently having no effect for better or worse. I have read a report by an author who has given heparin until the clotting time was prolonged for nearly an hour with no bleeding.

M.D., New Jersey.

ANSWER.—Only a tentative answer can be given to this inquiry, because the dose of heparin is unknown and it is not known how soon after the administration of heparin the coagulation time was determined. Also the method used has not been stated. Ampules of different sizes and concentrations are on the market, but it may be assumed that a 10 cc. ampule, containing 100 mg. of heparin, was used. This dose is usually insufficient to maintain a coagulation time of ten to fifteen minutes during the entire day and night. However, when given suddenly, within a few minutes to one-half hour, it may raise the coagulation time to a dangerous level.

The reaction of patients to heparin differs a great deal. Some patients are much more sensitive to it than others. If the patient has a damaged liver, jaundice or a hemorrhagic tendency, because of a vitamin deficiency, bleeding will occur sooner. A single determination of the coagulation time may not give a true idea of the action of heparin, as it may be made before or after the peak of the coagulation curve has been reached. The only way to administer heparin safely is to determine the coagulation time at short intervals, probably every half hour, until the tolerance of the patient is known. There have been a number of reported and unreported cases of hemorrhage following the use of heparin both in the postoperative field and in unsuspected defects in the mucous membrane, such as a duodenal ulcer or the lesion of ulcerative colitis. The drug must be administered with a great deal of caution and with exact indications. Thrombosis of the popliteal artery seems to constitute a proper indication, except that one should not expect a restoration of circulation from its use, as heparin will not dissolve existing clots but will prevent further clotting proximal or distal to the existing thrombus.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-APRIL 1942

Titles have been listed or Abstracts made of important articles in the following journals in the Current Literature Department of THE JOURNAL during the past four months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Three journals may be borrowed at a time. No journals are available prior to 1932. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Acta chirurgica Scandinavica. Stockholm.
Acta medica Scandinavica. Stockholm.
Acta obstetricia et gynecologica Scandinavica. Stockholm.
Acta radiologica. Stockholm.
Acta tuberculosea Scandinavica. Copenhagen.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Orthodontics and Oral Surgery. St. Louis.
American Journal of Orthopsychiatry. Menasha, Wis.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anais brasileiros de ginecologia. Rio de Janeiro.
Anais da Faculdade de medicina da Universidade de S. Paulo. São Paulo.
Anales de la Cátedra de patología y clínica de la tuberculosis. Buenos Aires.
Anales de la Sociedad mexicana de oftalmología y oto-rinolaringología. México, D. F.
Anesthesiology. New York.
Annales paediatrici. Basel.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of Surgery. Philadelphia.
Archiv für klinische Chirurgie. Berlin.
Archiv für Kreislaufforschung. Dresden.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
Archives de l'Institut Pasteur de Tunis.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives internationales de pharmacodynamie et de thérapie. Ghent.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Therapy. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivos argentinos de enfermedades del aparato respiratorio y tuberculosis. Buenos Aires.
Archivos argentinos de pediatría. Buenos Aires.
Archivos de pediatría del Uruguay. Montevideo.
Arquivos brasileiros de oftalmologia. São Paulo.
Arquivos do Serviço de assistência a psicopatas do estado de São Paulo.
Boletín de los hospitales. Caracas, Venezuela.
Boletín de la Liga contra el cáncer. Havana.
Boletín de la Sociedad de obstetricia y ginecología de Buenos Aires.
Bollettino della Societa italiana di microbiologia. Milan.
Brain. London.
Brasil-medico. Rio de Janeiro.
British Heart Journal. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of the Naval Medical Association. Tokyo.
Bulletin of the New York Academy of Medicine. New York.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Canadian Public Health Journal. Toronto.

*Cannot be lent.

Cancer Research. Baltimore.
Chinese Medical Journal. Peking.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Dermatologica. Basel.
Deutsche medizinische Wochenschrift. Leipzig.
Deutsche Zeitschrift für Chirurgie. Berlin.
Deutsches Archiv für klinische Medizin. Berlin.
Dia médico. Buenos Aires.
Diseases of the Eye, Ear, Nose and Throat. Chicago.
Edinburgh Medical Journal.
Endocrinology. Springfield, Ill.
Folia pharmacologica japonica. Kyoto.
Gann. Tokyo.
Gastroenterologia. Basel.
Geneeskundig tijdschrift voor Nederlandsch-Indië. Batavia.
Guy's Hospital Reports. London.
Hawaii Medical Journal. Honolulu.
Helvetica medica acta. Basel.
Hospital. Rio de Janeiro.
Illinois Medical Journal. Chicago.
Irish Journal of Medical Science. Dublin.
Jahresbericht des Kurashiki-Zentralhospitals. Kurashiki.
Journal of Allergy. St. Louis.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Bone and Joint Surgery. Boston.
Journal of Clinical Endocrinology. Springfield, Ill.
Journal of Clinical Investigation. New York.
Journal of Endocrinology. London.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of Industrial Hygiene and Toxicology. Baltimore.
Journal of Infectious Diseases. Chicago.
Journal of Investigative Dermatology. Baltimore.
Journal of the Iowa State Medical Society. Des Moines.
Journal of the Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal-Lancet. Minneapolis.
Journal of Laryngology and Otology. London.
Journal of the Maine Medical Association. Portland.
Journal of the Medical Association of the State of Alabama. Montgomery.
Journal of the Medical Association of Georgia. Atlanta.
Journal of the Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of the Michigan State Medical Society. Muskegon.
Journal of the Missouri State Medical Association. St. Louis.
Journal of the National Cancer Institute. Washington, D. C.
Journal of Nervous and Mental Disease. New York.
Journal of Neurophysiology. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of the Philippine Medical Association. Manila.
Journal of Physiology. Cambridge.
Journal of the Royal Army Medical Corps. London.
Journal of the South Carolina Medical Association. Florence.
Journal of the Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Kitasato Archives of Experimental Medicine. Tokyo.
Lancet. London.
Laryngoscope. St. Louis.
Laval médical. Quebec.
Medical Annals of the District of Columbia. Washington.
Medical Journal of Australia. Sydney.
Medicina. México, D. F.
Medicine. Baltimore.
Military Surgeon. Washington, D. C.
Minnesota Medicine. St. Paul.

Mittellungen aus der medizinischen Akademie zu Kioto. Kyoto.
Monatsschrift für Psychiatrie und Neurologie. Basel.
Nebraska State Medical Journal. Lincoln.
New England Journal of Medicine. Boston.
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
Nordisk medicin. Stockholm.
North Carolina Medical Journal. Winston-Salem.
Northwest Medicine. Seattle.
Ohio State Medical Journal. Columbus.
Okayama-Igakkai-Zasshi. Okayama.
Ophthalmologica. Basel.
Pasteur, Revista mensual de medicina. México, D. F.
Pediatria prática. São Paulo.
Pennsylvania Medical Journal. Harrisburg.
Physiological Reviews. Baltimore.
Practitioner. London.
Proceedings of the Royal Society of Medicine. London.
Proc. of the Staff Meet. of the Mayo Clinic. Rochester, Minn.
Psychiatric Quarterly. Utica, N. Y.
Public Health Reports. Washington, D. C.
Quarterly Journal of Medicine. Oxford.
Quarterly Journal of Studies on Alcohol. New Haven, Conn.
Radiology. Syracuse, N. Y.
Review of Gastroenterology. New York.
Revista de la Asociación médica argentina. Buenos Aires.
Revista brasileira de biologia. Rio de Janeiro.
Revista chilena de pediatria. Santiago.
Revista de cirurgia de São Paulo.
Revista clinica española. Madrid.
Revista clinica de S. Paulo. São Paulo.
Revista cubana de cardiologia. Havana.
Revista de la Facultad de medicina. Bogotá.
Revista del Instituto de salubridad y enfermedades tropicales. México, D. F.
Revista médica de Chile. Santiago.
Revista médica de Córdoba. Córdoba.
Revista médica peruana. Lima.
Revista médica de Rosario. Rosario de Santa Fe.
Revista médico-social de sanidad y beneficencia municipal. Havana.
Revista de ortopedia y traumatologia. Buenos Aires.
Rhode Island Medical Journal. Providence.
Rivista di malariologia. Rome.
Rivista di patologia nervosa e mentale. Florence.
Rocky Mountain Medical Journal. Denver.
Schweizerische medizinische Wochenschrift. Basel.
Schweizerische Zeitschrift für Pathologie und Bakteriologie. Basel.
Sei-I-Kai Medical Journal. Tokyo.
Semana médica española. Madrid.
Southern Medical Journal. Birmingham, Ala.
Southern Surgeon. Atlanta, Ga.
Southwestern Medicine. El Paso, Texas.
Surgery. St. Louis.
Surgery, Gynecology and Obstetrics. Chicago.
Taiwan Igakkai Zassi. Taihoku, Formosa.
Texas State Journal of Medicine. Fort Worth.
Tubercle. London.
Ugeskrift for læger. Copenhagen.
Union médicale du Canada. Montreal.
Virginia Medical Monthly. Richmond.
*War Medicine. A. M. A. Chicago.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
Wiener klinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Yale Journal of Biology and Medicine. New Haven.
Zeitschrift für Orthopädie. Stuttgart.
Zentralblatt für Chirurgie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "SS," Student Section; "ab," abstracts; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy *Med.—Medicine*
Am.—American *Nat.—National*
A.—Association *Pharm.—Pharmaceutical*
Coll.—College *Phys.—Physicians*
Conf.—Conference *Rev.—Revision*
Cong.—Congress *Ry.—Railway*
Conv.—Convention *Soc.—Society*
Dist.—District *Surg.—Surgery*
Hosp.—Hospital *Surgs.—Surgeons*
Internat.—International *S.—Surgical*
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